The Real Effects of Debt Relief: Evidence from Independent School Districts in Texas*

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U.S. school districts face pressing needs for facility improvements, yet limited debt capacity hampers their ability to raise sufficient funding for these projects. I study how capital spending affects educational outcomes in heavily indebted school districts. Using a novel quasi-natural experiment, I find that debt support helps school districts raise additional capital spending, leading to substantial long-term improvements in educational outcomes, including higher test scores and graduation rates. The findings suggest that state intervention in debt capacity can produce long-run positive effects by revitalizing previously forgone high-impact projects.

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Deteriorating school facility conditions in the U.S. pose a major threat to the quality of public education. Poor infrastructure creates unsafe learning environments and limits students' access to technology essential for digital-age learning. In 2012, total deferred maintenance costs reached $200 billion (Alexander and Lewis (2014)), which has nearly tripled over the last decade (Filardo (2021)). School districts frequently issue debt for large-scale capital projects, repaying it through local property taxes. However, many districts have utilized much of their debt capacity and cannot easily expand it due to caps on property tax revenues and the inability to pledge future gains. Consequently, unequal access to physical capital can significantly impact human capital development during the K-12 years, further widening the education gap and income inequality (e.g., Card et al. (2022), Chetty et al. (2014), Huggett et al. (2011)).

This paper examines the effect of capital expenditures on student outcomes, using a novel quasi-natural experiment from school district debt assistance programs in Texas. In 1998, the state government introduced subsidies that partially offset districts' debt service costs for newly issued bonds, and in 2000 it expanded the program to cover existing obligations. Since their inception, the programs have distributed roughly $84 billion in subsidies and provided significant debt relief across the state, particularly for districts with heavier debt burdens. The subsidies lowered districts' debt service costs, which in turn expanded their capacity to issue additional bonds and invest in school facilities. I use an instrumental variable approach that exploits the variation in subsidies generated by historical debt obligations to estimate the effect of capital spending on student outcomes.

Identifying the causal effect of capital spending on educational outcomes is challenging due to unobservable factors influencing both. For example, wealthier districts can maintain high academic performance without significant capital expenditures because their facilities are already in good condition, which can bias OLS estimates downward. To alleviate these endogeneity concerns, I include district and year fixed effects to account for time-invariant factors and aggregate shocks. Nonetheless, unobservable temporal variations in local economic conditions may still bias the estimates, and additional controls for district characteristics are unlikely to fully resolve this concern.

To strengthen the causal interpretation of the results, I build on the institutional design of the Texas school district debt assistance programs. The instrument exploits districts' exposure to these programs and the timing of their inception. In practice, heavily indebted districts received disproportionately larger debt subsidies because their mounting obligations both qualified them for greater support and provided stronger incentives to apply for new funding. I measure debt burdens, defined as total long-term obligations relative to annual property tax revenues, in the late 1980s as a proxy for a district's exposure to debt relief programs. Importantly, focusing on the late 1980s, well before 1998, ensures that these debt burdens are not the result of strategic decisions by school districts in anticipation of the programs or of contemporaneous economic conditions at the time of their introduction. This exposure to debt relief, together with the introduction of the programs, serves as the instrument for capital spending, since districts with greater debt relief could access more resources for capital investment.

The first-stage results show that districts with higher pre-existing debt burdens significantly increase their capital spending following the introduction of the debt assistance programs. On average, these districts allocate roughly \$570 more per student in three-year cumulative capital spending or 22% more than their less-indebted counterparts. Over 85% of this incremental spending is directed toward major construction or renovation projects. For an average-sized district, this corresponds to an increase of roughly \$2.3 million in capital expenditures, equivalent to about 70% of the funding required to bring school buildings up to good condition.[1]

Utilizing the natural experiment, I find significant long-term benefits of capital investment across various measures of student outcomes. For instance, a \$1,000 per-pupil

[1] In 2013, the estimated average cost for necessary repairs, renovations, and modernizations to achieve good building condition was \$4.5 million among survey respondents Alexander and Lewis (2014), equivalent to approximately \$3.3 million in 2000 after adjusting for inflation.

increase in capital spending raises standardized 8th-grade reading and math scores by 0.06 and 0.12 standard deviations, respectively, in the 5–9 years following the investment. By contrast, I find no statistically significant effects on student outcomes during the first four years. Incremental infrastructure investments also generate positive effects beyond test scores. While I find little evidence of improvements in attendance, educational attainment, or labor market outcomes during the first four years after the investment, longer-run effects are consistently positive. For example, a $1,000 per-pupil increase in capital spending raises attendance by 0.12 percentage points and high school graduation rates by 1.9 percentage points between five and nine years after the investment. I also find modest but positive gains in early-career labor market outcomes, along with additional, though statistically insignificant, improvements in college entrance exam participation and enrollment.

A comparison of short- and long-term results supports the facility improvement channel. The effects of capital spending are muted or negligible in the short term but become pronounced in the long run, and both patterns hold broadly across outcomes. This timing suggests that students benefit only once projects are completed, with possible disruptions to learning during the construction phase. Consistent with this interpretation, prior studies emphasize the delayed realization of benefits from educational infrastructure investments (e.g., Cellini et al. (2010); Jackson and Mackevicius (2021)). Although direct testing of this mechanism is not possible due to data limitations, supplementary analyses lend support to the facility improvement channel by ruling out alternative explanations, including changes in operational spending, shifts in teacher quality, and in-migration of higher-performing students.

To ensure the internal validity of the results, I conduct a comprehensive set of robustness tests. I rerun the empirical tests excluding a subset of school districts significantly affected by concurrent events, such as fracking booms, which boosted the local tax base and could have confounded the results. Additionally, I examine the relationship between various measures of local economic growth and school district indebtedness during the pre-policy period to ensure that differential trends in local economic conditions do not bias the findings. I further confirm the robustness of the findings by including interaction terms between 1990 Census variables and linear trends.

This paper adds to several strands of the literature. First, it relates to literature that investigates the effect of capital spending on the quality of education. Prior studies often utilize the randomness around the voting threshold in bond elections as an exogenous shock on capital expenditures (e.g., Baron (2022), Biasi et al. (2025),Boyson and Liu (2022), Cellini et al. (2010), Martorell et al. (2016), Rauscher (2020)). Other studies exploit funding eligibility (e.g., Conlin and Thompson (2017), Goncalves (2015)) or the timing of an event (e.g., Brunner et al. (2022), Lafortune and Schönholzer (2022), Neilson and Zimmerman (2014)). This paper provides a complementary view through the lens of debt-constrained school districts that may receive voter support outside the narrow threshold bandwidth. Understanding these districts is crucial because they represent settings where additional funding is likely to unlock high-impact capital projects that have been deferred due to overwhelming outstanding debt burdens. The larger effect found in this paper, stemming from differences in pre-existing debt burdens, lends empirical support to this view.

This study relates to a broader literature on whether school spending matters in public education, ignited by the Coleman report (Coleman (1966)). A recent body of work documents the effect of school spending on student outcomes mainly via total or operational expenditures (e.g.,Abott et al. (2020), Biasi (2023), Jackson et al. (2016), Kreisman and Steinberg (2019)). This paper contributes to the literature by showing that local context plays a critical role in determining the efficiency of school spending. School districts operate under various institutional frictions—including political, financial, and administrative barriers—that can limit their ability to allocate resources effectively. This paper focuses on one such friction, debt constraints, and finds that relaxing it meaningfully improves the impact of spending on student outcomes.

This paper also adds to a growing body of research in finance that examines the real effects of financing constraints on municipalities. Previous papers focus on the effect of credit supply shocks on government expenditures and private-sector employment (e.g., Adelino et al. (2017) , Cornaggia et al. (2018)), wages (Dagostino (2018)), and quality in utilities (e.g., Agrawal and Kim (2022), Posenau (2022), Yi (2021)). I contribute to this literature by utilizing a unique dataset within the context of school districts to trace out the real effects of reducing debt financing costs. School districts mainly serve the purpose of delivering quality public education to students, with standardized outcomes such as test scores and graduation rates. Together with the granularity of school district data, this setting captures how changes in borrowing capacity affect students through multiple stages across both intermediate and long-run dimensions, from test scores to graduation rates, college enrollment, and ultimately labor market outcomes.

Overall, this paper causally identifies the substantial positive effects of capital investment on educational quality by focusing on a previously understudied margin: heavily indebted school districts. By exploiting a novel quasi-natural experiment from Texas's debt assistance programs, I show that districts receiving greater debt relief undertook large-scale infrastructure projects that significantly improved student outcomes, including test scores, graduation rates, and early-career earnings. Consistent with the facility improvement channel, these effects are muted in the short run but become significant later on. These results offer important insights for policymakers and school administrators, indicating that the effectiveness of capital spending depends on district conditions, such as debt constraints, and that policies to support school investment should account for differences in local debt capacity. Given the hazardous infrastructure conditions many students currently face, the findings emphasize the crucial role of debt support in improving educational outcomes and safeguarding student well-being.

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debt assistance programs, I document that the state-sponsored capital investment leads to meaningful long-term improvements in student success. suggesting that targeted financial interventions can enhance educational outcomes. Given the hazardous infrastructure conditions many students currently face, the findings emphasize the crucial role of debt support in improving educational outcomes and safeguarding student well-being.

1. Institutional Details

1.1. Financing Capital Investment

In 2020, U.S. public school districts spent over $870 billion to provide an adequate level of public education to students. More than 10% of the total expenditure was spent on capital outlays. Capital spending is a crucial part of school district expenditures as it is typically used to construct new facilities, renovate existing buildings, and/or purchase educational equipment such as school buses. Given the scale of the infrastructure projects, a combination of local taxes and state support allocated to facilities maintenance each year is insufficient to cover the associated costs.[2] As a result, school districts almost always rely on debt financing.

The most common type of municipal bonds issued by school districts is the general obligation (GO) bond.[3] GO bonds are backed by the taxing power of the issuer. School districts often pledge ad valorem taxes, or property taxes, to repay bondholders. In addition to the exemption from federal income tax, this feature allows school districts to borrow at

[2]Plant maintenance and operation spending explains around 9% of current spending among independent school districts in Texas. However, it cannot be used to, for example, build another campus for the following reasons. The usage of maintenance expenditures is limited to daily maintenance and operation of facilities, which often excludes major improvements. Even if those funds can be spent at the district's own discretion, it would require absurdly high property tax rates to raise enough capital funding. In addition, some districts may find maintenance expenditures insufficient for the regular upkeep of existing buildings if most of their buildings are severely outdated.

[3]Some school districts issue other types such as revenue bonds. Local governments issue revenue bonds to finance a specific project. They pay debt service on the bonds using the cash flows generated from the project. However, school districts rarely use revenue bonds as most of instructional facilities do not generate revenues.

relatively low interest rates compared to other types of financing. Hence, school districts typically use GO bonds and increase property tax rates to cover debt service payments.

However, some school districts remain underfunded without federal or state intervention since they differ vastly in their ability to raise property tax rates for many reasons.[4] For example, the issuance of GO bonds requires the issuer to receive voter approval. School districts with tax-sensitive voters may not be able to increase property tax rates if they cannot pass bond measures. Furthermore, high property taxes can lead to an increase in net out-migration which can erode the tax base (Tiebout (1956)). State governments often impose debt restrictions on school districts as well to maintain the financial health of local governments.

1.2. State Debt Assistance Programs in Texas

Until the 1990s, Texas school districts already under a large debt burden found it challenging to raise additional debt from local sources in the absence of state or federal support for capital spending. Such concerns directed attention toward the equalization of facilities funding, which led the state of Texas to pass the Instructional Facilities Assistance (IFA) program in 1998.[5]

The IFA was the first state-level intervention in Texas to provide continuing support to school districts. By sharing the debt service of the newly issued bonds throughout their life, the state intended to boost capital investment by school districts. The program provides a guaranteed yield of $35 per average daily attendance (ADA) for each penny of Interest and Sinking (I&S) tax effort.[6]

[4]States and federal government pay less than a quarter of the capital outlay and debt service, and 11 states do not provide any funding to school districts.

[5]Since 1984, Edgewood Independent School District and others have filed a series of school finance lawsuits, known as the *Edgewood* cases. The Texas Supreme Court ruled the state's school finance system unconstitutional, leading policymakers to revise the funding formula and redistribute excess revenue from wealthy to property-poor districts. However, this finance equalization was limited to current spending, covering only day-to-day school operations.

[6]Texas school districts charge two types of property tax rates. The school district uses I&S taxes to service debt and Maintenance and Operations (M&O) taxes to fund daily operations.

For example, the state would support 60% of annual debt service for qualifying bonds if an independent school district has $140,000 of taxable wealth per ADA.[7] Figure A3 presents the potential IFA assistance as a function of local taxable value per pupil.[8]

The IFA significantly lowered the local share of the debt burden. Around 30% of school districts received the funding during the first 4 rounds. They borrowed approximately $5.6 billion with state support, only paying 42% of debt service for the qualifying bonds on average. A total of $620 million was appropriated to help school districts pay for the first annual debt service on eligible debts across 11 funding rounds. The state continues to provide debt subsidies for the approved bonds, although no funding has been allocated to the IFA since 2017.

To be eligible for IFA assistance, the district has to meet several requirements. First, districts must apply for the funding as the IFA assistance is not automatically granted. The state funding was secured for the life of the eligible debt, so districts were not required to reapply for the funding in the following years. Also, the usage of bond proceeds is strictly limited to instructional facilities. Next, districts must have sufficient authorized issuance amounts from the previous bond elections.

While the IFA made substantial progress toward capital spending equalization, there were some limitations. The funding rounds were competitive as the funding fell short of the growing demand for modernizing school facilities. The state prioritized low-property wealth districts when the total amount of assistance requested exceeded the available funding at each round.

In addition, the state only supported the newly issued debt. Bonds issued before 1998 were not eligible for debt assistance, meaning that the issuers of these bonds unfortunately

[7] In this example, the state pays 60%(=1-$140,000÷$350,000) of the district's debt service payments on the approved bonds because the district can raise 40%(=$140,000÷$350,000) under the current assessed property valuation.

[8] The IFA assistance is not zero for some districts with taxable property wealth above the guaranteed yield ($350,000) due to some additional factors. School districts with less than 400 ADA were treated as if they had 400 students. Taxable wealth was adjusted downwards if the district experienced high enrollment growth over the past 5 years or was denied IFA assistance during the prior biennium.

had to manage their debt on their own.

Lastly, a concurrent legislative change partially negated the state's equalization effort. Both types of property tax rates (M&O and I&S) were initially subject to the recapture in 1993. However, districts have been allowed to retain excess revenues from I&S rates since 1997. This provision effectively induced property-rich districts to issue more debt, aggravating the inequalities in facilities spending.

The state of Texas subsequently launched the Existing Debt Allotment (EDA) program in 2000 to reduce the local share of the debt service on the existing debt. The EDA covered most new money bonds that did not qualify for IFA assistance, but non-GO bonds such as revenue bonds were excluded.[9] The EDA also operated under a guaranteed-yield approach, where the state guarantees the same $35 per ADA for each penny of I&S tax effort up to $0.29 per $100 of assessed property valuation.[10] Unlike the IFA, districts are automatically eligible for EDA assistance as long as their taxable property value per pupil is below the threshold. Figure 1 presents the time-series of I&S tax rates during 1994-2006. Since the EDA came into effect in 2000, school districts almost halved I&S tax rates.

Figure 2 shows the proportion of state debt subsidy relative to the district's annual debt service costs. The increase in debt subsidies is modest in the first two years of the IFA as the state only subsidized newly issued debt. However, the state's share of debt service has jumped to roughly 30% since the EDA was introduced. Over 57% of independent school districts in Texas benefited from the EDA during the first biennium, and the state continues to share the debt burden with more than 80% of them as of 2022.

In sum, both the IFA and EDA provided substantial debt financing aid to the highly indebted school districts, expanding their debt capacity. The IFA reduced the marginal debt financing costs by allowing the district to issue new debt with smaller increases in

[9] Revenue bonds are another commonly issued municipal bonds. Issuers of revenue bonds typically pledge future cash flows from a specific project. Since most facilities in school districts do not generate cash flows, revenue bonds were rarely issued by districts.

[10] In fact, the I&S tax rate eligible for the EDA funding is limited to the smaller of the three rates: the actual I&S rate during the second year of the preceding biennium, the I&S rate sufficient to pay the annual debt servicing costs on the EDA eligible bonds, and the statutory limit 0.29%.

property tax rates than before. On the other hand, the EDA lowered the servicing costs of the existing debt, which in turn created more room for taking on additional debt.[11]

2. Data and Summary Statistics

2.1. Data

The estimation sample comes from four main sources.

First, data on the student-level outcomes come from the Texas Education Agency (TEA), which covers all public K-12 students in Texas since 1993. The TEA records contain granular information on the student demographics, curricular activities, and educational outcomes. Individuals are anonymized with an identifier, allowing researchers to observe any public K-12 students in Texas throughout their school years. However, the TEA stops tracking students moving out of the state. Following the literature, I assume those students dropped out of school and exclude them from the estimation sample (e.g. Cabral et al. (2021)).

I obtain administrative data on all public post-secondary institutions in Texas from the Texas Higher Education Coordinating Board (THECB). The THECB provides individual-level information on student enrollment, admissions, and graduation since 2004. As it shares the same individual identifier as the TEA records, the THECB is a useful source for observing whether students pursue a higher degree. Similar to the TEA data, the THECB does not report students who attend out-of-state higher education institutions. I assume the students in the TEA but not in the THECB do not pursue post-secondary degrees.

I use district financials from the merged dataset consisting of the TEA district income statement data and the Common Core of Data (CCD) hosted by the National Center for Education Statistics (NCES). The merged dataset covers the universe of Texas school districts and includes information on revenues and expenditures as well as outstanding bond principals. Most of the school district financial characteristics date back to 1987, but de-

[11] See Clark (2001) and Plummer (2006) for more detailed descriptions of both programs.

tailed bond issuance information becomes available in 1993. All financial variables are converted to 2000 dollars using the historical CPI for all urban consumers.

Lastly, I collect other district characteristics from the Academic Excellence Indicator System (AEIS) provided by the TEA. The AEIS mainly publishes student performance at the district level, but it also provides information on district demographics and tax collection data in the 1994-2011 school years.

To understand the effect of debt support on the average student in the district I construct 5 district-level student outcomes from the resulting merged dataset. First, I define capital spending per pupil as the total capital outlays divided by the number of total enrolled students.[12] To measure student academic achievement, I standardize statewide 8th-grade reading and math individual test scores each year and aggregate these measures across all students in the same district-year group. I also define the graduation rates as the fraction of 12th-grade students graduating within the district-year group. College entrance exam participation rates are defined as the fraction of 12th-grade students who took either the SAT or ACT. Lastly, I construct college enrollment rates, defined as the fraction of 12th-grade students who enroll in any 2-year or 4-year institutions within 3 years of graduation.

The estimation sample includes approximately 870 unique independent school districts in Texas from 1994 to 2004 that were eligible to receive any debt support as of 1994. Since I do not observe the actual eligibility measures, I construct a hypothetical debt assistance percentage using the IFA funding formula as a proxy for each district's funding eligibility.[13] Applying this filter effectively excludes around 90 property-rich school districts from the sample. I prefer to focus on the sample of districts eligible for debt assistance for stronger identification. Property-rich districts were likely to benefit from the removal of the I&S tax recapture, as described earlier. Since this change occurred around the same time as

[12] In the main analyses, I subtract the direct state subsidy to capital expenditures to mitigate the effects of state assistance prior to the IFA and EDA.

[13] Since the IFA had multiple funding rounds, the state adjusted the property wealth of districts that applied but failed to receive debt support in the previous round. The imputed eligibility measure does not consider such adjustments because I do not observe the IFA application records.

the IFA's implementation, it could introduce bias if property-wealthy districts increased capital expenditures independently of the debt assistance programs.[14] Lastly, the sample period reflects the availability of dependent variables in the data and the long-run analysis in this paper.

2.2. Summary Statistics

Table 1 describes the district characteristics between 1994 and 2004. All variables are winsorized at the 1st and 99th percentiles to minimize the influence of outliers. The average district has a 20% higher net outstanding debt relative to its property tax levy between 1987 and 1991, where net outstanding debt is computed as the long-term bond principal minus the debt service fund balance. The large standard deviation relative to its mean indicates that there are substantial variations in local debt burden.

The state is expected to cover 54% of the school district's debt servicing costs on average. Together with the average per pupil property wealth well below the proposed threshold of $350,000, a vast majority of Texas school districts are eligible for any debt support through the IFA or EDA. The average district spends around $975 per pupil on large-scale facilities improvement projects every year. Capital spending is a large part of total expenditures, as it alone accounts for around 11.9% of total expenditures per pupil. Also, capital expenditures tend to be lumpy, often clustering around the bond issuance. Figure 3 plots the average per pupil spending around bond issuance years. School districts typically allocate a significant portion of bond proceeds within a few years of issuance, as indicated by relatively lower levels of capital spending outside these years. This is consistent with the nature of infrastructure projects, which often require a lump sum payment at the beginning. Therefore, I aggregate the three-year cumulative capital spending to capture the full scope of capital investment activity in the following analysis.

[14] In untabulated results, I find that including these districts does not qualitatively alter the findings.

3. Empirical Specification

This paper attempts to understand whether and how capital expenditures can improve education quality in the long run by focusing on debt-laden school districts.

To this end, a naïve OLS approach would be to regress actual capital spending on educational outcomes h periods later. However, the regression fails to establish causality if unobservable district characteristics drive both capital expenditures and measures of educational improvement. For example, school districts with better economic conditions can offer more educational resources to their students. On the other hand, their strong local economies allow them to easily finance infrastructure project costs to properly maintain their facilities. In this case, they would still exhibit considerable enhancement in academic performance in the absence of debt support, which would result in an underestimation of the OLS coefficients.

I take several steps to alleviate the endogeneity concerns. School district and year fixed effects are included to capture time-invariant school district characteristics and aggregate shocks. Importantly, school district fixed effects eliminate any level differences in school district economic conditions, which limits the sources of the endogeneity to time-varying conditions. To control for the remaining time-varying local economic conditions, I also add various observable district characteristics. I include an enrollment size quartile dummy to proxy for the school district size, which could be correlated with the growth in local economic activities. I add a log of per pupil current expenditures as wealthy school districts spend more on instructional spending. I use cash holdings scaled by current expenditures in the regression, as districts can utilize unrestricted cash holdings at their discretion to boost educational spending. Finally, I control for the local share of total revenue per pupil to factor in the district's dependence on state funding.

To further strengthen the causal interpretation of the results, I employ an instrumental variable (IV) approach. The instrument takes advantage of school districts' heterogeneous responses to the introduction of state debt assistance programs in Texas based on their pre-existing debt burdens.[15] Conceptually, the instrument stems from the idea that districts with higher existing debt burdens are more incentivized to apply for IFA funding or to receive larger EDA support, holding per-pupil property wealth constant. Although property wealth determines eligibility through the allocation formula, its level alone is not sufficient to guarantee debt support. At a given level of per-pupil property value, a district must apply for IFA funding or have previously issued debt to be granted EDA assistance. To the extent that heavy outstanding indebtedness constrains a district from initiating new capital projects, debt-laden districts have greater incentives to receive debt support on new debt. On the other hand, the extent of debt-financing cost reductions for existing debt escalates with the size of the current debt load.

Specifically, I define the instrument as the interaction term between a cross-sectional group indicator and a post-policy period indicator variable, expressed as:

$$DTL\ High_i \times Post_t, \tag{1}$$

where i denotes the district and t the year. This difference-in-differences estimator captures identifying variation arising from heterogeneous responses in capital expenditures across districts with varying levels of pre-existing debt burdens to the debt assistance programs. To construct the cross-sectional indicator, denoted as $DTL\ High_i$, I divide school districts into two groups based on the median value of their average net long-term debt-to-property tax levy (DTL) ratio from 1987 to 1991—a period well before the onset of the first debt assistance cycle in 1998—as a proxy for program exposure.[16] Similar to a corporate leverage ratio, this measure reflects a district's outstanding debt relative to cash flows from property

[15] I utilize pre-existing debt burdens instead of the kink regression discontinuity around the threshold or the allocation formula for the following reasons. A bulk of school districts have property wealth well below the cutoff, which leaves very few districts around the kink to reliably test the hypothesis. Also, the allocation formula is a function of per pupil taxable property value. If property wealth captures the extent of educational resources available in a district, the resulting effects may be confounded.

[16] This ratio mechanically drops districts with zero or missing property tax revenues in the 1987-1991 period because their debt-to-property tax levy ratios are undefined.

tax revenues. The indicator equals 1 if the district has this ratio above the median and 0 otherwise. $Post_t$ is set to 1 for the years 1998 and onward and 0 otherwise. I choose 1998 as an event date because it is when the initial IFA funding round took place. Lastly, the interaction of these two indicators serves as the instrument for capital spending.

The historical DTL ratio captures a district's debt burden without reflecting its contemporaneous economic conditions. Anecdotal evidence suggests that debt financing decisions do not reflect the economic outlook too far ahead. In general, Texas restricts school districts from excessively relying on projected future property taxes when they demonstrate their ability to pay off the bonds. Texas Education Code, Section 45.0031 allows school districts to use projected property tax revenues anticipated for the earlier of the tax year five years after the current tax year or the tax year in which the final payment is due for the bonds. This effectively limits school districts from incorporating the information on future property tax bases more than five years ahead when considering debt financing. Therefore, bond issuance decisions made prior to 1991 may not reflect the economic outlook at least seven years ahead, which supports the validity of the instrument.

Furthermore, the historical DTL ratio tends to persist and has a high correlation with a district's debt burden around policy implementation. As the average maturity of newly issued bonds has been roughly 10 years since the 1980s (Cortes et al. (2022)), school districts with higher bonded indebtedness around the late 1980s continue to bear sizeable debt service costs as their prior debt obligations extend into subsequent years. Figure A1 shows an example of a debt payment schedule in Elgin ISD in 1997. Over 70% of the incremental debt servicing costs in 1998 are projected to remain in the district's balance sheet for more than 14 years after the issuance in 1997.

This feature allows $DTL\ High_i$ to be highly predictive of the level of debt burden around 1998.

This instrument motivates the following two-stage least squares (2SLS) regression model:

$$Cap_{i,t} = \pi(DTL\ High_i \times Post_t) + \Pi C_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t} \tag{2}$$

$$\bar{Y}_{i,t} = \beta \widehat{Cap}_{i,t} + \Gamma C_{i,t} + \delta_i + \delta_t + u_{i,t}, \tag{3}$$

where i denotes district, t denotes year, and $\bar{Y}_{i,t}$ represents the average of Y over a specified period. In what follows, I focus on the average from t to $t+4$, which I refer to as short-term, and the average from $t+5$ to $t+9$ as long-term.

In the first stage, I instrument the endogenous variable, *Cap*, using *DTL High* $\times$ *Post*. *Cap* is cumulative per pupil capital spending from t to t+2. $C_{i,t}$ is a vector of control variables, including the imputed eligibility using the allocation formula, a log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t denote district and year fixed effects, respectively. Standard errors are clustered at the district level.

In the second stage, I regress the predicted capital spending on various district-level outcomes, $\bar{Y}_{i,t}$. The parameter of interest is β, representing the average cumulative improvement in outcome variables in the short or long run.

A causal interpretation rests on the relevance condition and exclusion restriction. A formal test of this relevance condition in the regression framework confirms a strong and positive relation between the instrument and the endogenous variable. Table 2 shows that school districts with previously high indebtedness spend around $570 per student more on capital projects than those with low indebtedness. In addition, Figure 5 plots the yearly estimates of equation 2 using annual capital expenditure per pupil instead of three-year cumulative spending. Trends in capital spending between high- and low-DTL districts only begin to diverge after the state introduced the debt assistance programs. Importantly, high F-statistics in excess of 10 ensure that the instrument strongly predicts the endogenous variable.

I also investigate the exclusion restriction in several ways to evaluate the instrument's validity. While the instrument conditional on various controls including school district fixed effects can handle most of the time-invariant unobservable district characteristics or relatively short-lived economic growth, there may still exist some endogeneity concerns. I test if school districts with high *DTL* exhibit higher growth in several proxies of local economic conditions: a log of per capita income, a log of median household income, a log of total labor force, and unemployment rates. Due to a lack of school district-level measures during the sample period, I rely on the 1990 and 2000 Decennial Census. This approach effectively leaves a single observation for each school district around the first debt assistance program in 1998.

Table 3 indicates that most of the local economic conditions are not strongly predicted by the instrument. Income measures and unemployment rates show no statistically significant relationship with the instrument, whereas the total employment growth is strongly correlated with *DTL High*. This may not come as a surprise given that high *DTL* school districts are often located next to or within metropolitan areas. Figure 6 shows the geographical distribution of school districts by indebtedness, with districts shaded in dark blue concentrated around some of the most populous cities in Texas. In this respect, column 4 of Table 3 raises a reasonable concern that the instrument may affect outcome variables through changes in local employment rather than debt subsidies.

I take several steps to address this concern. First, I show that parametrically controlling for the population size does not alter the results in this paper. I rerun the main analysis after incorporating the interaction term between the log of employment in 1990 and linear trends. The results remain robust to the inclusion of the interaction terms.

In addition, I include the log of enrollment size, which is available at an annual frequency and highly correlated with the total employment in the regression equation. This approach also does not change the results. Finally, I show that the results are robust to dropping the school districts in the top enrollment size quartile as of 1997 and reassigning

DTL High among the remaining school districts.

Since fast-growing districts are around metropolitan areas and tend to exhibit a larger number of enrolled students, this exercise ensures that the results are not driven by the school districts with high employment growth.

Concurrent events around the policy implementation might influence the outcome variables as well. A couple of notable changes coincided with the debt assistance programs, including the exclusion of I&S tax rates from the recapture and fracking booms. Changes to recapture rules were made, where excess revenues from I&S rates were retained since 1997, potentially incentivizing highly wealthy districts previously subject to recapture to issue debt. This change implies that highly wealthy districts previously subject to recapture may become more incentivized to issue debt, perhaps to offset the recaptured surplus from M&O taxes. To mitigate the confounding effects from such concurrent events, I eliminate districts that has no change of receiving debt subsidies in the pre-policy period.[17] Furthermore, the significant fracking booms in the early 2000s, affecting available school resources and local labor market conditions, especially around districts with large shale oil and gas reserves, are considered. The extraction booms had impacts on students from those areas as well, resulting in lower graduation rates (Kovalenko (2023)). Results are robust to excluding districts with high exposure to the oil and gas industries, proxied by the percentage of taxable property values derived from oil and gas production sites.

School districts with below- and above-median debt-to-property tax levy ratios might also be different along unobservable dimensions. If this is the case, I may observe the same results in the absence of the debt relief programs. For example, one might be concerned that highly indebted school districts have already spent a substantial sum of money on ongoing or recently finished capital projects before the sample period, possibly showing improvements in educational outcomes in the following years.

[17] While $350,000 per pupil was the cutoff for the IFA and EDA, dropping these districts still leaves around 90% of all school districts in Texas. I prefer this sample over the full sample because the highly wealthy districts may exhibit improvements in educational outcomes through any events unrelated to the debt programs. The results remain qualitatively similar using the full sample.

Measuring the school district's indebtedness relative to property tax levies before 1991 alleviates this concern. The typical facilities improvement projects take around 3 years to complete. Figure A2 presents a recent construction schedule from the Austin ISD's bond proposal. As shown in Figure A2, most constructions are planned to take less than 5 years. At the beginning of the pre-policy period, 1994, it is plausible that most of the projects funded by the pre-1991 debt were already finished. Given that it may take several years for enhanced facilities conditions to pay off, one would be able to observe the effects of those projects by 1998. To the extent that these effects stabilize over time, district fixed effects should capture the permanent increase in outcomes due to the previous projects.

Furthermore, it is unlikely that school districts keep the proceeds over an extended period to spend on capital projects in the distant future. Rather, they tend to use bond proceeds within a few years. Note that the IRS prohibits tax arbitrage where districts borrow at the tax-exempt yield and invest at the taxable interest rate. The maximum yield the bond proceeds can earn is often much lower than the prevailing interest rate for that reason. Since most school bonds are tax-exempt, saving the bond proceeds in the investment account for a long time may result in negative returns or negative tax arbitrage.

4. Results

4.1. Capital Investment

Most of the incremental capital spending goes to major construction or renovation projects. Table 4 reports the estimation results for equation 2, where the dependent variables are the three-year cumulative expenditures on construction, equipment, and land and existing structures. Column 1 shows that treated school districts direct around \$486 per pupil to construction expenditures over the three-year period, including replacements and major facility alterations. This accounts for roughly 85% of the total state-sponsored capital investments reported in Table 2 (i.e., \$486/\$569=85.4%). Columns 2 and 3 suggest that the remaining fund goes to costs associated with instructional equipment purchases, land acquisition, and site improvements.

Although data on a more granular breakdown of capital outlays or on maintenance at the facility level is unavailable, these findings suggest that debt relief allows school districts with high debt burdens to finance critical infrastructure projects within their facilities. This allocation likely reflects districts' prioritization of long-term, capital-intensive improvements that contribute directly to the quality of physical learning environments. Therefore, by alleviating existing debt obligations, state-sponsored support facilitates these debt-laden districts' investment in essential structural resources, fostering an improved student learning environment.

4.2. Academic Achievement

The results in the previous section document that an increase in state debt support leads to a substantial rise in the school district's capital expenditures, particularly for major infrastructure improvement projects. To measure potential gains from the reduction in debt financing costs, I next investigate how the quality of public goods changes after receiving debt relief.

I first examine the effects of capital spending on standardized 8th-grade reading and math test scores from the statewide assessment. To the extent that debt relief brings material benefits to students in the treated school districts, test scores can be used to measure improvements in the average student's academic performance.

I find that incremental capital spending leads to long-term improvement in academic performance. Table 5 presents the estimation results of equation 3 using 8th-grade standardized reading and math test scores as dependent variables. To construct the dependent variables, I standardize individual 8th-grade test scores each year, converting them to z-scores based on the statewide distribution, and then calculate the district-level average of these standardized scores. These district-level averages are then smoothed as five-year rolling averages. In columns 1 and 2, capital spending increases average reading scores in the long run, with no short-term effect. The coefficient estimate in column 2 is both economically and statistically significant. The estimate implies that a $1,000 increase in per pupil capital spending results in roughly a 0.057 standard deviation increase in reading scores on average five years later.

The same increase in capital spending enhances average math scores as well. Columns 3 and 4 in Table 5 present the estimation results using 8th-grade standardized math test scores as dependent variables. The results for math scores also exhibit long-lasting improvements. The estimates imply that a $1,000 increase in per pupil capital spending leads to approximately a 0.12 standard deviation increase in math scores on average five years later.

Graphical representation of the coefficient estimates briefly summarizes the results, characterized by long-term improvements in test scores following the initial dip. Each panel in Figure 7 graphically depicts the estimates from the dynamic version of equation 3 , where I rerun equation 3 using $Y_{i,t+h}$ for each $h = 0, 1, ..., 9$ instead of the rolling average. The evolution of the estimates is in line with prior studies documenting the positive effects of capital spending on educational outcomes(e.g. Cellini et al. (2010)). Test scores are negatively affected by debt assistance during the initial periods as a major renovation of the existing facilities or construction of new buildings may disrupt student learning. For example, loud noise from the construction sites or temporary portable classrooms due to facility upgrades can adversely impact students' motivation and result in muted or even negative effects during the first few years. Several years after these projects, the coefficient estimates gradually increase and stabilize. This is consistent with the benefits of school infrastructure improvements, which can take years to materialize(Jackson and Mackevicius (2021)).

The magnitude of the effect in this study is large compared to existing studies on the impact of capital spending on academic achievement. Much of the literature finds little to no improvement from additional capital expenditures (e.g. Martorell et al. (2016), Baron (2022)). Among the studies that do document positive effects, Cellini et al. (2010) find that bond measures that are narrowly passed result in a capital spending increase of about $5,000 per pupil over the next five years, raising the year-six test scores by 0.16 standard deviations. Their findings imply that the effect is 0.03 standard deviations per $1,000 per pupil capital spending (i.e., $0.16 \div 5 = 0.03$), representing around 28% to 52% of the effect size found in this paper. More recently, Biasi et al. (2025) show that closely winning bond elections leads to substantial improvements in test scores. Their estimates suggest roughly 0.02 to 0.03 standard deviations per $1,000 per pupil in capital expenditures, with a more pronounced impact in districts serving a higher share of students from low socioeconomic backgrounds and minority groups.

The difference in magnitudes between this paper and existing studies can be attributed to the type of marginal infrastructure projects considered. A significant portion of the literature exploits close bond elections as the main identification strategy (e.g., Biasi et al. (2025), Boyson and Liu (2022), Martorell et al. (2016)). While the random bond passage provides a clean setting to establish causality, the randomness may come at the expense of focusing on a limited set of capital projects that are narrowly passed or failed. To the extent that individual voting decisions depend on evaluating a proposed project's potential gains, the marginal capital projects in close bond elections might have minimal or negligible expected returns. Furthermore, this setting excludes school districts that cannot frequently make it to the bond election. Most likely, candidates are those with a substantial amount of outstanding debt burdens as these districts cannot issue more debt for various reasons[18]. Their proposed projects may create much greater impacts if these districts are relieved of their debt burdens, allowing them to undertake projects with significant potential for educational improvements. As a result, studies using narrowly passed bond elections may

[18] State-imposed debt ceiling can limit them from participating in bond elections. Alternatively, they may not attempt elections at all if they believe residents would not approve bond measures due to high current property tax rates.

find smaller or no effects compared to this paper, as they miss the significant gains that could be achieved by addressing the constraints faced by heavily indebted districts.

Treated school districts in this paper are unable to undertake additional projects due to the outstanding debt burden. This might be a huge loss to those school districts if these projects can generate substantial educational gains. Hence, reducing the debt burden generates much larger gains than narrowly winning the bond election. This is because alleviating the debt burden enables school districts to initiate projects that may have significant educational returns, thus maximizing the potential benefits of infrastructure investments. By focusing on reducing debt constraints, this study highlights the importance of financial flexibility in allowing districts to pursue projects that can meaningfully enhance student outcomes.

The effect on test scores is also comparable to findings in the literature regarding the impacts of operational spending on student outcomes. For instance, the Tennessee Student/Teacher Achievement Ratio experiment (STAR) reduced the number of students per class by roughly 30% to 40% and improved standardized test scores by 0.15 standard deviations (e.g. Chetty et al. (2011), Schanzenbach (2006)). Since STAR cost roughly 47% of operating expenditures, this estimate implies that $1,000 spent on the class size reduction leads to a 0.051 standard deviation increase in test scores.[19] As the literature often finds the impact of non-capital spending on educational outcomes exceeds that of capital spending (Jackson and Mackevicius (2021)), the estimates in this section suggest that debt assistance generates substantial returns to educational achievement. However, given the differences in purpose and characteristics between capital and operational spending, these comparisons should be interpreted with caution, particularly as each category affects students through distinct channels.

The results for both academic achievement measures consistently find the positive and long-lasting effects of capital spending. This finding suggests that incremental capital

[19] Since the average current spending per pupil is $6,280, this approximately results in an effect of 0.051 standard deviations in test scores per $1,000 operating spending per pupil (i.e., 0.152÷($6,280×0.47÷$1,000)=0.051).

spending from lower debt financing costs yields long-term positive gains for students, as value-adding capital projects become affordable for school districts.

4.3. Non-test Outcomes

While capital expenditure leads to long-term improvements in academic outcomes, test scores alone do not fully capture its benefits to student learning. For example, students on the margin can complete public education and pursue higher degrees if they can stay comfortable during hot weather thanks to the updated air-conditioning system. To evaluate the overall impact on students, I examine a set of non-test outcomes.

I find that capital projects lead to long-term improvements in attendance, suggesting that enhanced facility conditions encourage students to stay engaged in school. Columns 1 and 2 of Table 6 present results for attendance rates, defined as the percentage of instructional school days that students attended each academic year. The estimates show that an additional $1,000 invested in infrastructure projects corresponds to an increase of approximately 0.12 percentage points in attendance rates several years later, with no statistically significant effects observed initially. This effect size represents 15% of the standard deviation (i.e., 0.12/0.8 = 15%), indicating a reasonably large impact. Although the average attendance rate is slightly below 96%, it varies little across districts, with a standard deviation of 0.8% in the estimation sample. Panel A in Figure 8 illustrates this gradual improvement, showing that attendance rates initially remain stable but rise sharply around the sixth year and stay elevated through the ninth year.

Graduation outcomes improve following an increase in capital spending, aligning with the previous results on academic achievement. In columns 3 and 4 of Table 6, the coefficient estimates suggest evidence supporting the long-term positive effects of capital expenditures. The coefficient estimate is statistically and economically significant in column 4 only. The results indicate that a $1,000 increase in capital expenditure correlates with a roughly 1.9 percentage point increase in graduation rates after five years. Similar to the findings for test scores, the patterns observed in columns 3 and 4 indicate that improvements in school facilities drive these effects; graduation rates initially show muted or negative effects in the short term but increase after five years. Panel B in Figure 8 illustrates the findings, showing the lasting influence of capital spending on high school completion rates. The coefficient estimates hover near zero in the early years but increase significantly around the sixth year, staying elevated through the ninth year.

The analysis also reveals that students become more motivated to pursue higher education, though the estimates show positive but statistically insignificant effects. Columns 5 and 6 of Table 6 present the estimation results for college entrance exam participation rates, while columns 7 and 8 focus on college enrollment rates. A $1,000 increase in capital spending is associated with an approximate 1.3 percentage point rise in college exam participation rates after five years. Similarly, the effects on college enrollment rates are positive, suggesting that the same increase in capital spending corresponds to an approximate 0.9 percentage point rise in college enrollment after five years. Although most estimates are not statistically significant at the 10% level, the overall pattern remains consistent with previous findings. Panels A and B in Figure 9 indicate a long-term improvement in college exam participation and enrollment rates following increased capital spending, though these effects remain statistically insignificant. This pattern suggests a positive but not definitive trend in higher education engagement over time.

Several factors can explain relatively weak responses on non-test outcomes. First, both college entrance exam participation rates and college enrollment rates could be imprecisely measured. For example, if better educational facilities increase the likelihood of pursuing higher education throughout one's life, these measures fail to identify individuals who change their minds about attending college after working for a few years. In addition, the TEA and THECB do not report students who leave the state before they graduate and attend higher education institutions elsewhere. This could either bias the coefficient estimates toward zero due to measurement errors or downward if the attrition rate is systematically higher among the treated school districts.

4.4. Labor Market Outcomes

The positive effects of infrastructure improvement through debt assistance are also evident in labor market outcomes. Table 7 presents estimates from equation 3 on log annual earnings between ages 24 and 26 for students working in Texas. Columns 1 and 2 show results for all students working in Texas, indicating that initial cohorts—those in the early period of increased capital spending—experience a decline in annual income. In contrast, later cohorts see boosts in their annual earnings. Specifically, initial cohorts experience a decline of approximately 3% per year for every $1,000 in capital spending, whereas later cohorts earn additional income by around 2% annually per $1,000 invested.

Subsample analyses reveal that the positive earnings effect is primarily driven by high school graduates who did not pursue higher education. Columns 3 and 4 focus on students who enrolled in college, showing less consistent effects on earnings. The effect is most pronounced among high school graduates who did not pursue higher education, as shown in columns 5 and 6. At a minimum, this pattern suggests that infrastructure investments benefit these graduates in their early careers, possibly due to improved academic performance or skill development during their school years that translates into better initial job placements. In contrast, college-enrolled students aged 24 to 26 may still be completing their studies or starting jobs with high growth potential, where immediate income gains are less evident but could increase in the long term as they advance in their careers.

While I find positive gains in annual income, the magnitude is, at best, modest to small. Several factors may explain this limited effect. A key limitation is that labor market outcomes often take a long time to fully materialize, and here, I measure annual income only for students employed in Texas between ages 24 and 26 due to data availability. If high-potential earners move out of state, these estimates likely underestimate the true effects of infrastructure improvements. Additionally, the positive impact on income could become more pronounced if measured later in students' careers, once they are more seasoned employees. Infrastructure investments in schools might initially contribute more to non-income-related benefits, such as job readiness or stability, which do not directly translate to higher earnings in the early career years.

In sum, the set of findings so far strongly suggests positive gains from infrastructure improvements, with the effects mainly arising from heavily indebted school districts. This study documents consistent evidence that capital expenditures in these districts lead to enhanced in-school outcomes—such as higher test scores and graduation rates—and early career outcomes, indicating that improvements in facilities may contribute to a more conducive learning environment. By tracing the impact of capital spending on both educational quality and initial labor market engagement, this analysis highlights how strategic investments in school infrastructure can produce both immediate educational benefits and incremental economic gains.

5. Alternative Explanations

The proposed mechanism through which incremental capital investment affects educational outcomes in this paper is the improvement of educational infrastructure. To further explore other channels that could generate observably similar effects, I turn to operational spending, teacher quality, and composition effects.

5.1. Operational Spending

Prior research has shown that additional current expenditures improve academic performance because they influence student learning directly compared to capital projects (e.g., Jackson et al. (2016), Jackson and Mackevicius (2021), and Baron (2022)). Debt-laden school districts may seek to increase operational spending by capitalizing on lower debt service costs following the implementation of debt assistance programs. This raises the possibility that a positive spillover into operational funding (i.e., an increase in current spending) could account for the findings discussed in the previous section.

To examine this, I modify the dependent variables to reflect current spending and its components in equation 2. Table 8 suggests a negative, rather than positive, spillover on current expenditures, which at least rules out the operational spending channel.[20] Column 1 shows that three-year operational spending per pupil decreases by $319. This represents about 1.6% of the average current expenditures over the three years (i.e., $319/($6654×3)=1.6%). Roughly 70% of this reduction is attributable to instructional costs, which is not surprising given that most current expenditures cover teacher wages.

5.2. Teachers

Any positive changes in teacher characteristics could also explain the previous findings, even without incurring extra expenditures. For instance, districts can enhance teaching quality by replacing existing teachers with more experienced ones.

I show that changes in teacher-related outcomes do not drive the main findings. Table 9 reports the estimation results on various instructional teacher characteristics. Columns 1 through 3 indicate that highly leveraged districts hire more teachers, possibly in anticipation of enrollment growth. These districts increase the total number of teachers by 0.5 p.p. without meaningfully losing the existing teachers.

In addition, these newly hired teachers do not appear to be more experienced. Column 4 indicates that teachers in treated districts receive, on average, around $1,890 more in salary. Since these districts are more likely to anticipate rapid enrollment growth, as reported in Table 3, the relatively inelastic short-term supply of teachers may necessitate a salary increase. On the other hand, in columns 5 and 6, teachers in debt-constrained districts have lower experience both in total and within the district. This likely stems

[20] This differential decline in operational spending between high- and low-leverage districts likely reflects the aggregate contraction in state education funding around 2000–2002. Highly levered districts typically receive a larger share of their funding from the state, due to lower local property wealth. As a result, when the state reduced its funding to school districts in response to the economic downturn and budget constraints, these districts experienced disproportionately large declines in current expenditures.

from hiring more inexperienced teachers to manage the growth in student population. Consistent with this view, the proportion of teachers with advanced degrees does not differ significantly between highly indebted and less constrained districts, as shown in column 7.

5.3. Composition

It is also possible that these results are driven by highly motivated students moving into the district, rather than by improvements benefiting the average student already residing in the district. To the extent that debt relief raises expectations about infrastructure conditions, it may incentivize high-performing students to migrate to the treated school districts.

Table 10 presents the results for reading and math scores and graduation rates after excluding students who moved into the current school district within the past two years.[21] The coefficient estimates are nearly identical to, or slightly larger than, those in the previous analysis. This suggests that the long-term gains in educational performance are unlikely to be driven by newly arrived students who may have been attracted by anticipated school facility improvement projects. Rather, it is the outcomes of the remaining students that improve, consistent with the infrastructure improvement channel.

Taken together, the findings in this section strongly suggest that the observed educational gains are not driven by operational spending increases, improvements in teacher quality, or changes in student composition, such as the selective in-migration of higher-achieving students. The list of alternative mechanisms proposed in this section is by no means comprehensive. However, they represent factors that directly affect educational outcomes, as they tend to influence either teachers or students, who are the primary agents through which educational investments translate into performance gains. These results provide reassurance that capital investment plays a central role in driving sustained educational benefits.

[21] Note that the F-statistics decline compared to the previous tables. This is due to the sample construction: each year or cohort must have at least two lagged observations to track their districts. This requirement substantially reduces the number of pre-treatment periods in the first stage from four to two years, resulting in lower statistical power.

6. Conclusion

As a school district's debt capacity is linked to its local property tax base, this creates stark disparities in the ability to fund improvements to outdated educational facilities. For highly indebted districts, existing financial burdens further compound these challenges, making it nearly impossible to undertake capital improvements without external assistance. As a result, students in these districts are forced to learn in disadvantaged environments, with deteriorating buildings and limited access to modern technology—conditions that hinder educational outcomes and exacerbate existing inequities.

In this paper, I document the critical role of capital investments in enhancing educational outcomes through state debt support. Using the introduction of a series of state-level debt assistance programs, I first demonstrate that additional debt support helps heavily indebted school districts raise capital spending. The state intervention substantially impacts capital investment, with these districts raising their three-year cumulative capital expenditures by 22% relative to less-leveraged counterparts. Moreover, the incremental capital outlays are allocated primarily to construction expenditures rather than equipment purchases, indicating a focus on large-scale infrastructure improvement projects aimed at addressing poor building conditions.

I also document that students benefit in the long run from additional infrastructure projects with state-sponsored capital investment. Despite an initial drop, standardized reading and math scores reveal that improved building conditions have long-term positive impacts on students. The magnitude vastly exceeds what the existing studies relying on close bond elections find and corresponds with what has been observed from the well-known results on current spending. Similarly, incremental capital outlays lead to higher graduation and attendance rates. These positive effects extend to labor market outcomes, where early cohorts experience a temporary decline in earnings, but later cohorts benefit from substantial income gains.

The findings of this study shed light on how lowering the local debt burden can contribute to narrowing the education gap due to poor educational infrastructure. The examples of the IFA and EDA in Texas illustrate how strategic policy interventions can enable highly indebted districts to overcome previous borrowing limitations, resulting in enhanced educational facilities and improved student outcomes. Importantly, this has broader implications beyond school district financing as public goods provision by other types of local governments also hinges on their debt positions. This study underscores the significance of municipal finance policies in shaping residents' well-being and local communities' sustainability.

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FIGURE 1. Average I&S Tax Rates in the 1994-2006 period.
This figure plots the average I&S tax rates, a part of property tax rates dedicated to debt service, from 1994 to 2006.

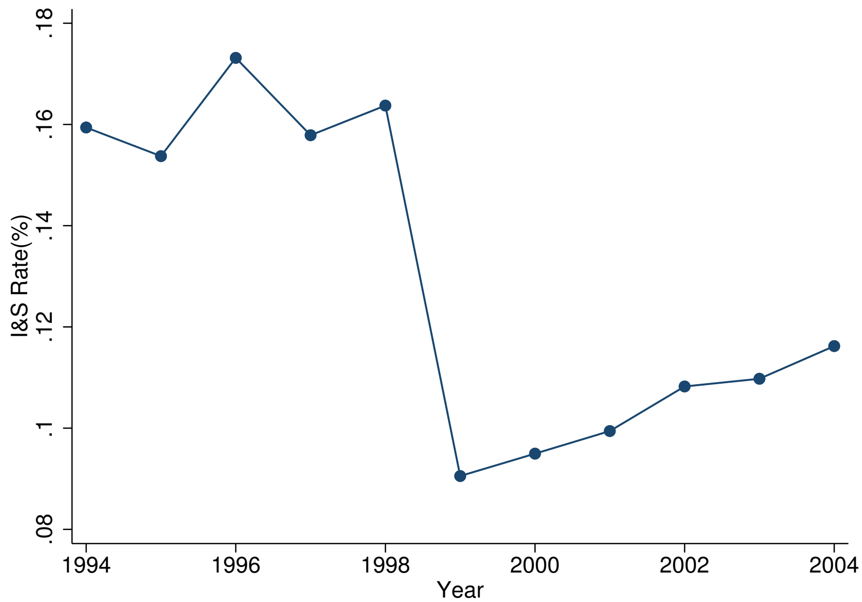


FIGURE 2. Average State Debt Assistance in the 1996-2004 period.
This figure plots the average state debt assistance as a fraction of annual debt service payments between 1996 and 2004. Debt assistance includes debt subsidies from both IFA and EDA. Annual debt service payments are defined as the sum of the amount of long-term debt retired and interest payments, subtracted by the changes in the sinking fund balance.

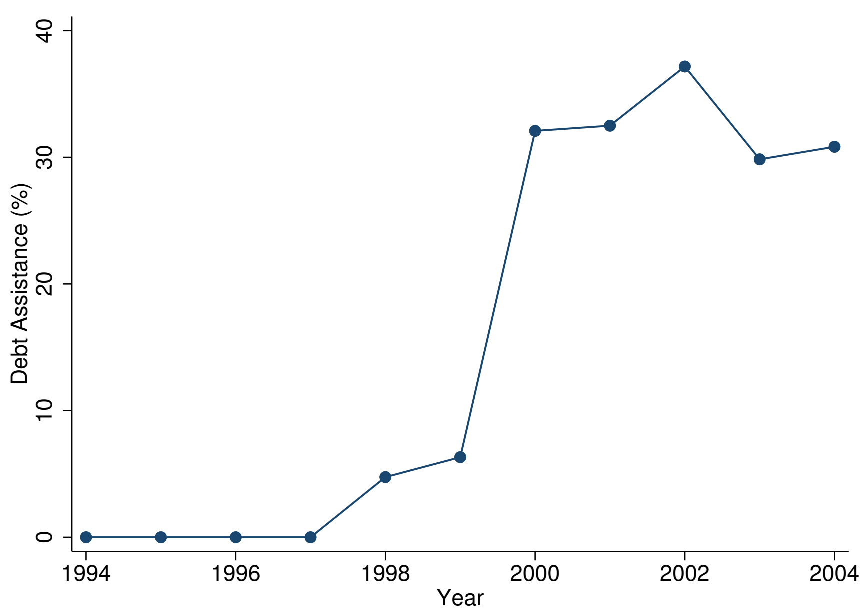


FIGURE 3. Average per pupil Capital Spending Relative to Issuance Year.
This figure shows the average per pupil capital spending relative to the issuance year. Year 0 represents the year of bond issuance.

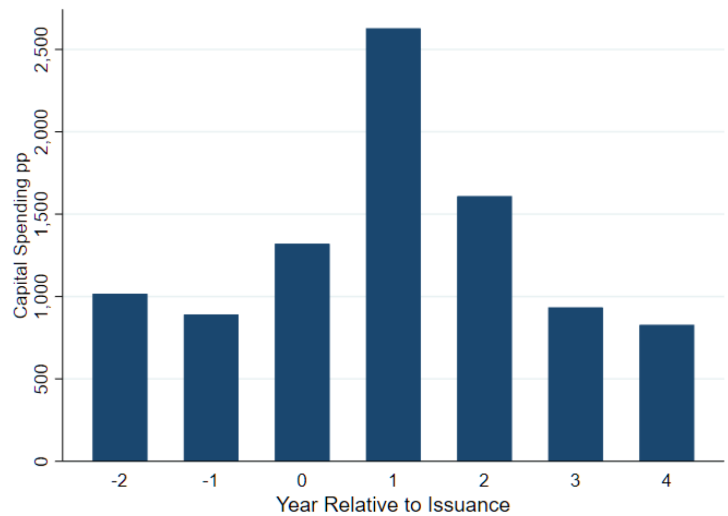


FIGURE 4. IFA Funding Recipients in the 1996-2006 period.
This figure plots the districts receiving IFA assistance as a fraction of the total number of school districts in each group defined by *DTL* $High_i$ between 1996 and 2006. The blue line indicates the average percentage of IFA funding approval among districts with low ex-ante borrowing constraints (*DTL* $High_i = 0$). The red line indicates the average percentage of IFA funding approval among districts with high ex-ante borrowing constraints (*DTL* $High_i = 1$).

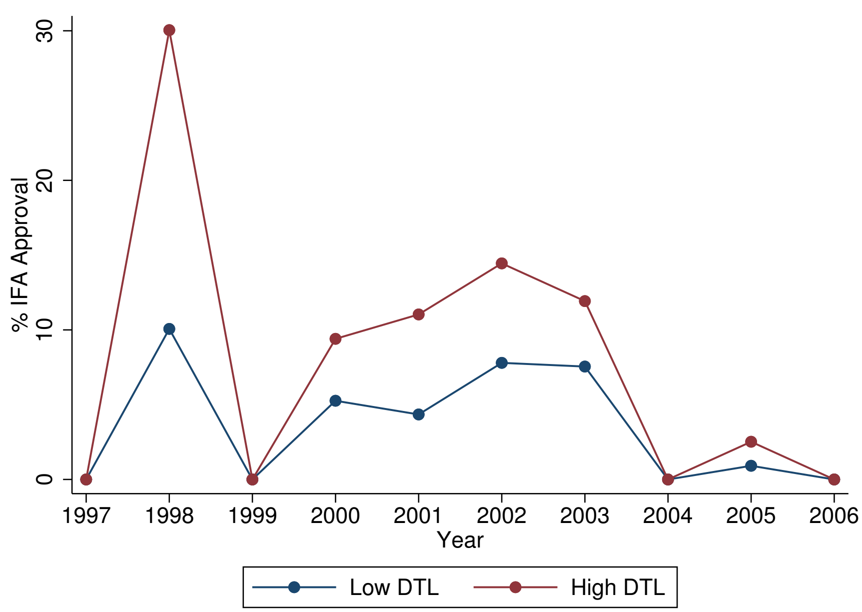


FIGURE 5. First Stage Estimation Results.
This figure plots coefficient estimates and 95% confidence intervals from the following first stage of the IV approach: $Annual\_Cap_{i,t} = \sum_{j \neq 1997} \pi_j (DTL\ High_i \times \mathbf{1}_{t=j}) + \Pi C_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$. The dependent variable is annual per pupil capital spending. The coefficient estimate is allowed to vary by year where the reference point is the year 1997. $DTL\ High_i$ takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. Control variables in $C_{i,t}$ include the imputed eligibility using the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. α_i and α_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors clustered at the district level.

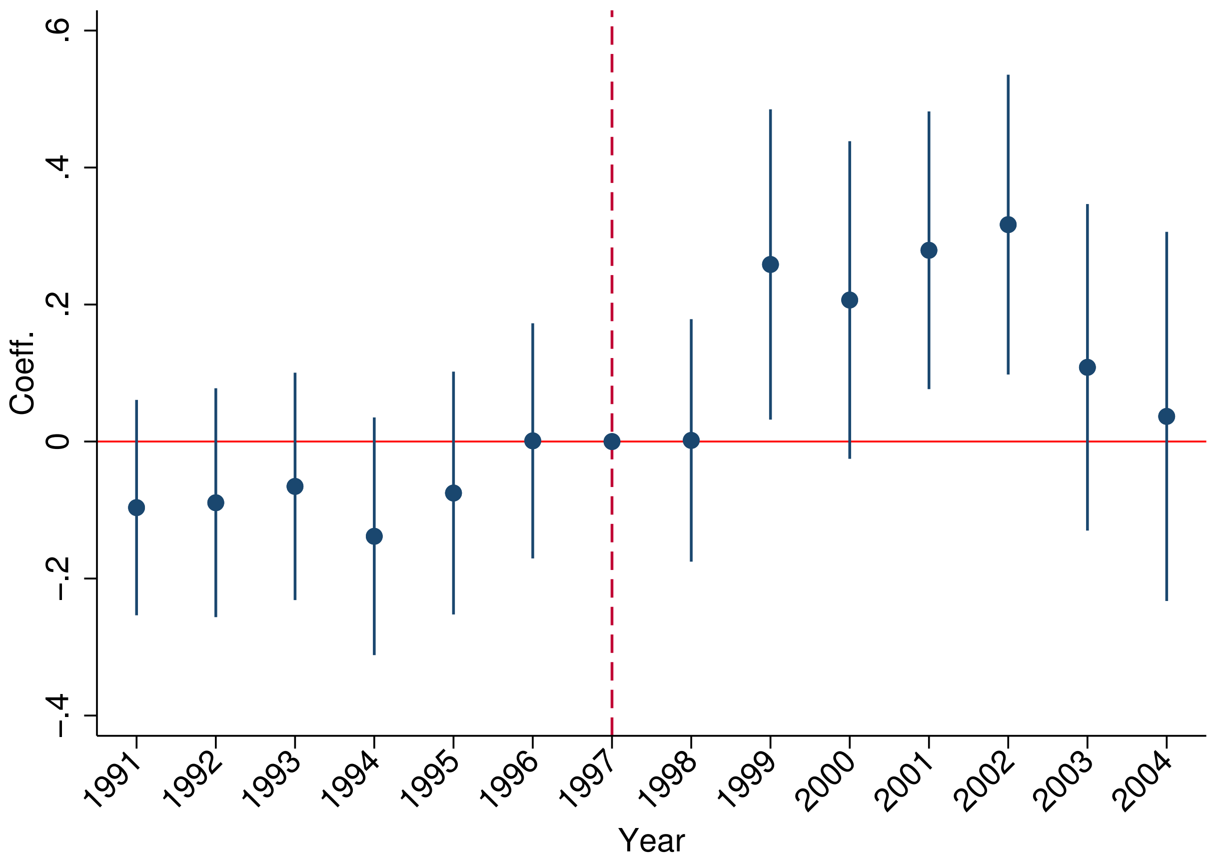


FIGURE 6. Geographical Distribution of School Districts by Indebtedness.
This figure shows the geographical distribution of school districts by *DTL High*, which takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. White indicates districts that are not included in the sample.

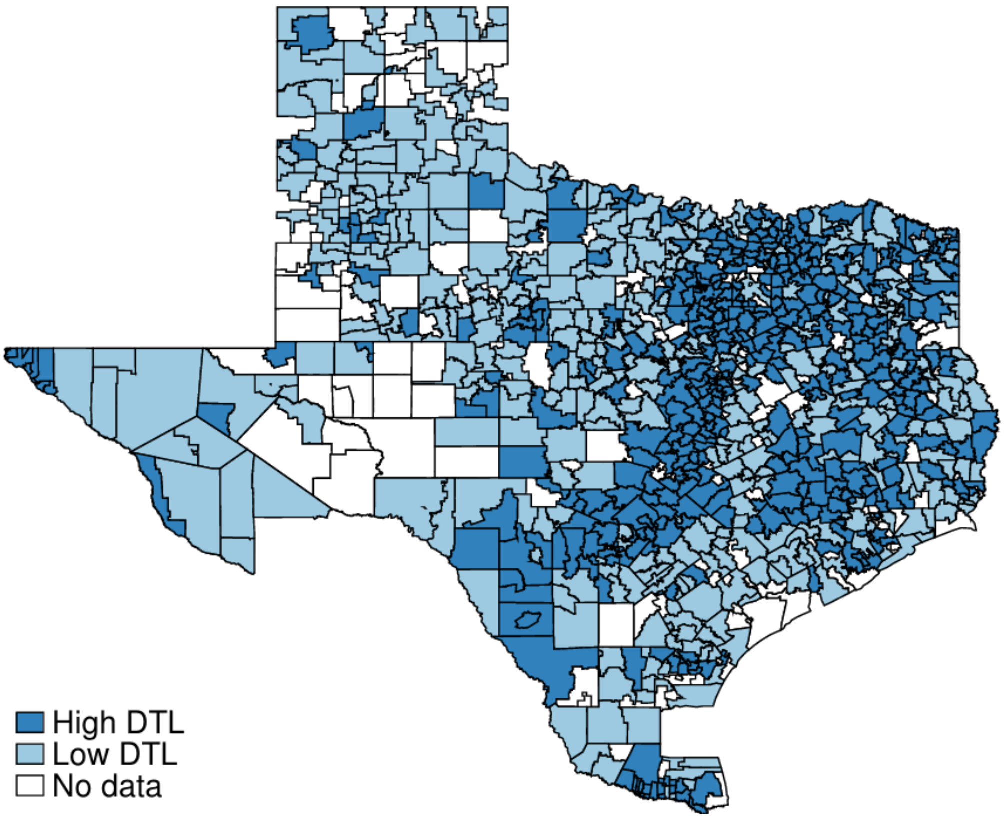
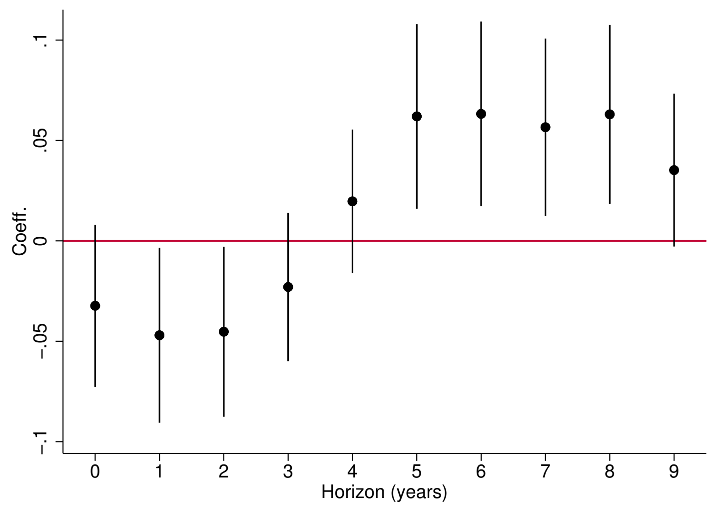
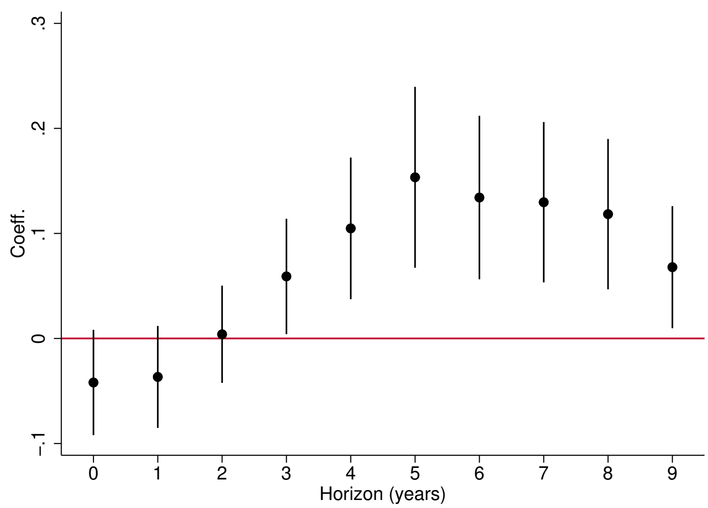


FIGURE 7. Effect of Debt Relief on Standardized Test Scores.
This figure plots coefficient estimates and 95% confidence intervals from the following second stage of the IV approach: $Y_{i,t+h} = \beta^h \widehat{Cap_{i,t}} + \Gamma^h C_{i,t} + \delta_i^h + \delta_t^h + u_{i,t+h}$, across horizons h=0,1,...,9. The dependent variables are standardized 8th-grade reading scores in panel A and math scores in panel B. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility using the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the district level.

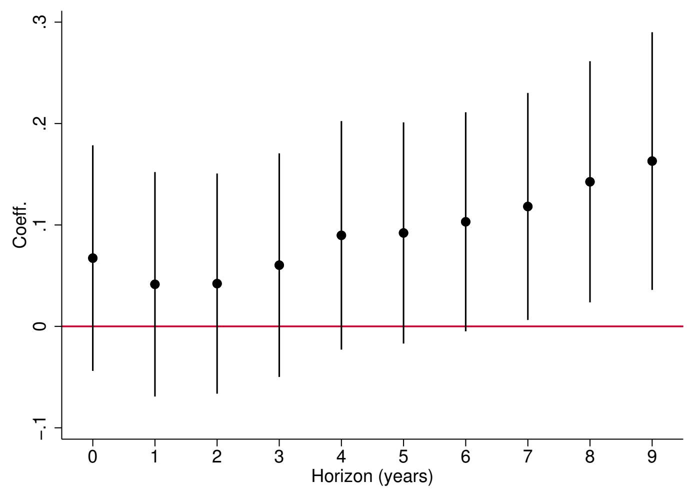


a. Reading Scores

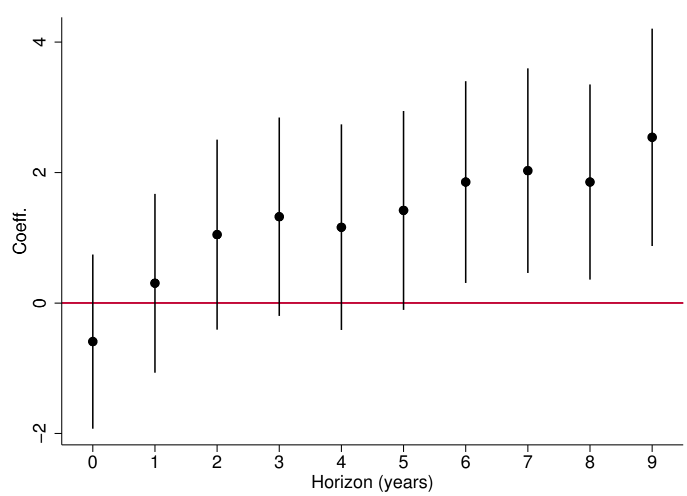


b. Math Scores

FIGURE 8. Effect of Debt Relief on Non-test Outcomes: Attendance and Graduation. This figure plots coefficient estimates and 95% confidence intervals from the following second stage of the IV approach: $Y_{i,t+h} = \beta^h \widehat{Cap_{i,t}} + \Gamma^h C_{i,t} + \delta_i^h + \delta_t^h + u_{i,t+h}$, across horizons h=0,1,...,9. The dependent variables are attendance rates in panel A and graduation rates in panel B. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility using the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the district level.

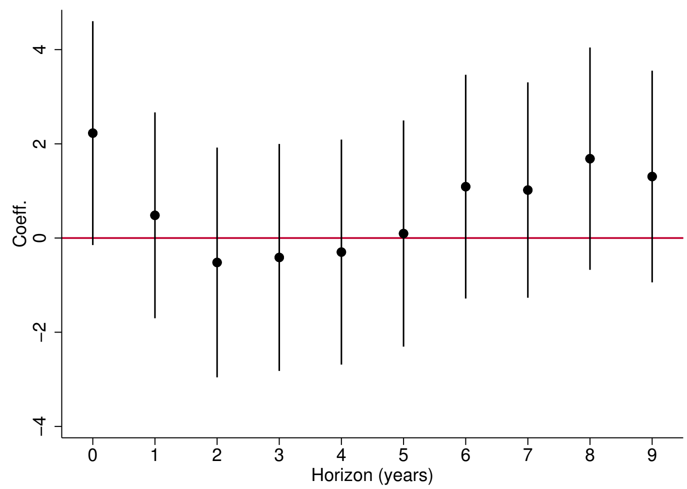


a. Attendance (%)

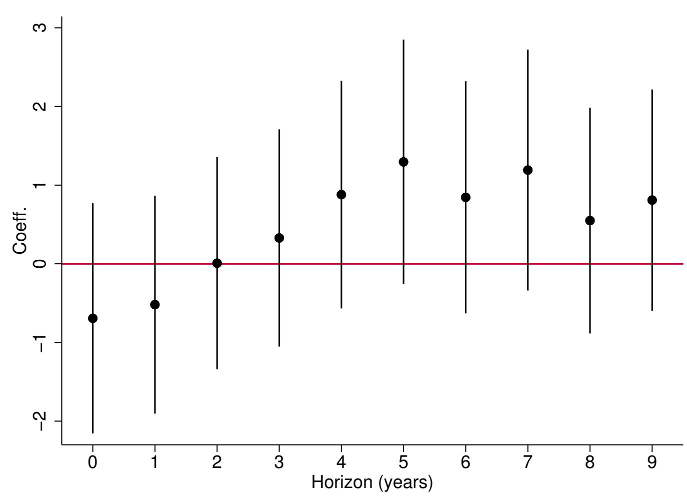


b. Graduation (%)

FIGURE 9. Effect of Debt Relief on Non-test Outcomes: College Exam Participation and Enrollment.
This figure plots coefficient estimates and 95% confidence intervals from the following second stage of the IV approach: $Y_{i,t+h} = \beta^h \widehat{Cap_{i,t}} + \Gamma^h C_{i,t} + \delta_i^h + \delta_t^h + u_{i,t+h}$, across horizons h=0,1,...,9. The dependent variables are college entrance exam participation rates in panel A, and college enrollment rates in panel B. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility using the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the district level.

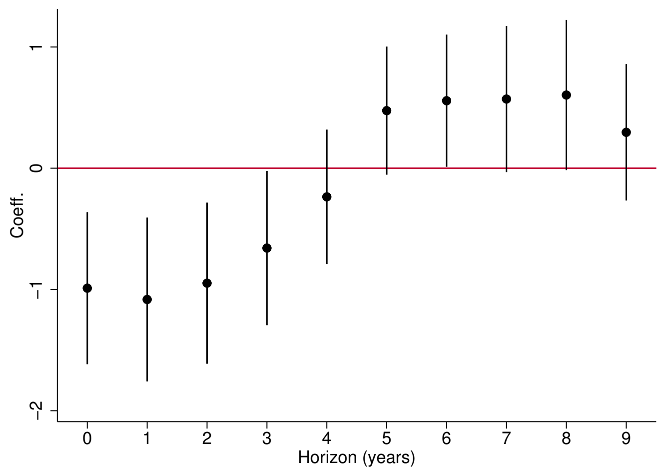


a. College Exam Participation (%)

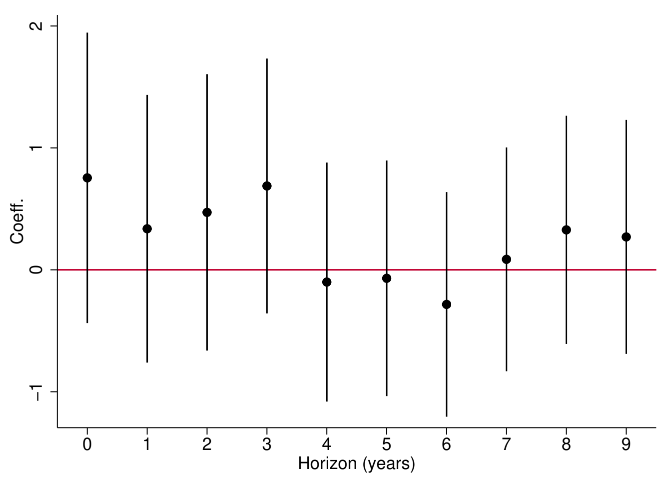


b. College Enrollment (%)

FIGURE 10. Effect of Debt Relief on Labor Market Outcomes.
This figure plots coefficient estimates and 95% confidence intervals from the following second stage of the IV approach: $Y_{i,t+h} = \beta^h \widehat{Cap_{i,t}} + \Gamma^h C_{i,t} + \delta_i^h + \delta_t^h + u_{i,t+h}$, across horizons h=0,1,...,9. The dependent variables are the log of average annual income (Panel A) and the percentage employed (Panel B), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility using the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the district level.



a. Age 24-26 Wage



b. Age 24-26 Emp. (%)

TABLE 1. Summary Statistics

This table provides descriptive statistics at the district-year level. The sample consists of independent school districts in Texas from 1994 to 2004. *DTL* is the ratio of the outstanding long-term debt to property tax revenues. *DTL* is defined as the average *DTL* in the 1987-1991 period. *Subsidy-to-Debt Payment* is calculated as the sum of state debt funding divided by the annual debt service payment. *Property Wealth* is the taxable property value per pupil. % *Eligible* is the imputed eligibility based on the allocation formula. % *Local Rev* is local revenues as a fraction of total revenues. *Capital* and *Current* are capital and current expenditures, respectively. *Reading* and *Math* are the district averages of standardized 8th-grade reading and math scores, respectively. *LT Debt* is defined as outstanding long-term debt. *Cash-to-Current Exp.* represents cash holdings scaled by current expenditures. *Attendance* is the district-average attendance rate. *Graduation* is the high school graduation rate among 12th-grade cohorts. *College Exam Participation* is the college entrance exam participation rate. *College Enrollment* is calculated as a fraction of 12th-grade students who enroll in any two-year or four-year institutions within three years of graduation. *Age 24-26 Wage* is the average annual income at ages 24-26. All spending variables are in 2000 dollars.

	Mean	SD	p25	p50	p75
DTL 1987-1991	1.20	1.3	0.16	0.88	1.89
Subsidy-to-Debt Payment	0.16	0.3	0	0	0.25
Property Wealth ($ K/pp)	229	290	107	155	237
% Eligible	53.8	26.6	39.4	60.8	74.2
Total Revenue ($/pp)	8100.1	3469.7	6598.3	7350.3	8400.6
% Local Rev	42.2	21.3	26.2	36.5	53.4
Total Expenditure ($/pp)	8151.6	3397.7	6452.3	7363.8	8764.7
Current ($/pp)	6654.0	1664.6	5639.7	6309.7	7188.5
Capital ($/pp)	974.8	1394.8	246.9	495.9	1132.9
LT Debt ($/pp)	3107.7	3966.1	0	1949.9	4708.9
Cash-to-Current Exp.	0.37	0.4	0.19	0.29	0.44
Reading (σ)	0.061	0.3	-0.11	0.089	0.26
Math (σ)	0.063	0.3	-0.14	0.081	0.28
Attendance (%)	95.9	0.8	95.4	95.9	96.5
Graduation (%)	74.4	12.6	66.7	74.4	82.5
College Exam Tested (%)	62.7	15.9	52.1	62.2	73.5
College Enroll (%)	45.6	12.0	37.5	45.0	53.1
Age 24-26 Wage ($)	24299.6	4709.2	21117.2	23948.7	27001.7

TABLE 2. First Stage Estimation Results.
This table reports coefficient estimates from the following first stage of the IV approach: $Cap_{i,t} = \pi(DTL\ High_i \times Post_t) + \Pi C_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$. The dependent variable is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. Columns 1 and 2 estimate the first stage without and with control variables, respectively. $DTL\ High_i$ takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. $Post_t$ is an indicator denoting if t is greater than or equal to 1998. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. α_i and α_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

Dep. Var.: Capital Spending($1,000)	(1)	(2)
DTL High × Post	0.610***	0.569***
	(0.143)	(0.138)
% Eligible		-0.011**
		(0.005)
Cash-to-Current Exp.		3.115***
		(0.287)
Log Current Exp. pp		-0.852*
		(0.506)
Size FE	Yes	Yes
District FE	Yes	Yes
Year FE	Yes	Yes
Adj R^2	0.32	0.35
Obs	9590	9590
F-stats	18	17

TABLE 3. Correlations between Local Economy Growth Measures and Treatment Assignment.

This table reports coefficient estimates from the following cross-sectional regression equation: $\Delta Y_i = \rho\ DTL\ High_i + \Gamma \Delta C_i + \epsilon_i$. The dependent variables are the log of per capita income growth, the log of median household income growth, unemployment rate growth, and the log of total employment growth between 1990 and 2000. $DTL\ High_i$ takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. Control variables in $C_{i,t}$ include changes in the enrollment size quartile, growth rates of the local share of total revenue per pupil, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. Heteroskedasticity-consistent standard errors are presented in parentheses. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

Dep. Var.:	(1) Log Per Capita Income90_00	(2) Log HH Med Income90_00	(3) Unemployment Rate90_00	(4) Log Employment90_00
DTL High	0.002	0.003	-0.003	0.150***
	(0.011)	(0.009)	(0.002)	(0.013)
Controls	Yes	Yes	Yes	Yes
Adj. R^2	0.00	0.01	-0.00	0.21
Obs.	860	861	856	856

TABLE 4. First Stage Estimation Results by Each Category.
This table reports coefficient estimates from the following first stage of the IV approach: $Cap_{i,t} = \pi(DTL\ High_i \times Post_t) + \Pi C_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$. The dependent variables are the three-year cumulative spending on construction, equipment, and land and existing structures in thousands of 2000 dollars.. $DTL\ High_i$ takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. $Post_t$ is an indicator denoting if t is greater than or equal to 1998. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. α_i and α_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	(1) Construction	(2) Equipment	(3) Land and Existing Structures
DTL High × Post	0.486***	0.036*	0.014*
	(0.132)	(0.020)	(0.008)
Controls	Yes	Yes	Yes
District FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adj R^2	0.33	0.55	0.37
Obs.	9590	9590	9590

TABLE 5. Effect of Debt Relief on Test Scores.
This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t+4$ in columns 1 and 3, and between $t+5$ and $t+9$ in columns 2 and 4. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading (σ)		Math (σ)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.025	0.057***	0.018	0.121***
	(0.015)	(0.020)	(0.019)	(0.034)
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	9590	9589	9590	9589
F-stat	17	17	17	17

TABLE 6. Effect of Debt Relief on Non-test Outcomes.
This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are attendance rates in columns 1 and 2, graduation rates in columns 3 and 4, college entrance exam participation rates in columns 5 and 6, and college enrollment rates in columns 7 and 8. In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Attendance (%)		Graduation (%)		College Exam Tested (%)		College Enrollment (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	0.060	0.123**	0.553	1.938***	0.248	1.290	-0.042	0.942
	(0.048)	(0.052)	(0.536)	(0.686)	(0.916)	(1.011)	(0.551)	(0.625)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9590	9590	9590	9590	9557	9575	9590	9590
F-stat	17	17	17	17	19	18	17	17

TABLE 7. Effect of Debt Relief on Labor Market Outcomes.
This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are the log of average annual income (columns 1 and 2) and the percentage employed (columns 3 and 4), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Age 24-26 Wage		Age 24-26 Emp. (%)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.030***	0.020**	0.425	0.070
	(0.010)	(0.009)	(0.402)	(0.307)
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	6974	6974	6974	6974
F-stat	22	22	22	22

TABLE 8. Alternative Explanation: Operational Spending.
This table reports coefficient estimates from the following first stage of the IV approach: $Cur_{i,t} = \pi(DTL\ High_i \times Post_t) + \Pi C_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$. The dependent variable is the three-year cumulative total operating, instructional, support services, and other spending per pupil in thousands of 2000 dollars. $DTL\ High_i$ takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. $Post_t$ is an indicator denoting if t is greater than or equal to 1998. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. α_i and α_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	(1) Current	(2) Instruction	(3) Support Services	(4) Other
DTL High × Post	-0.319***	-0.223***	-0.089***	0.000
	(0.047)	(0.030)	(0.022)	(0.004)
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Adj R^2	0.92	0.91	0.90	0.88
Obs.	9590	9590	9590	9590

TABLE 9. Alternative Explanation: Teacher Quality.
This table reports coefficient estimates from the following first stage of the IV approach:
$Tch_{i,t} = \pi(DTL\ High_i \times Post_t) + \Pi C_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$. The dependent variables include the student-teacher ratio, the percentage change in the number of teachers, the turnover ratio, the average teacher salary in thousands of 2000 dollars, total years of teacher experience, years of experience within the district, and the proportions of teachers holding bachelor's, master's, or doctoral degrees. *DTL High*$_i$ takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. *Post*$_t$ is an indicator denoting if t is greater than or equal to 1998. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. α_i and α_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	(1) Student-Teacher Ratio	(2) Δ% Teacher	(3) Teacher Turnover (%)	(4) Salary ($1,000)	(5) Experience (Yr)	(6) Experience in District (Yr)	(7) Higher Degree (%)
DTL High × Post	0.019	0.531**	0.312	0.186***	-0.202***	-0.202***	0.089
	(0.030)	(0.228)	(0.252)	(0.044)	(0.047)	(0.037)	(0.193)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R^2	0.90	0.19	0.37	0.84	0.74	0.82	0.78
Obs.	9590	8726	9590	9585	9590	9590	9590

TABLE 10. Alternative Explanation: Composition Effects.
This table reports coefficient estimates from the following second stage of the IV approach, after dropping students who moved into the current school district within the past two years: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t+4$ in columns 1 and 3, and between $t+5$ and $t+9$ in columns 2 and 4. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math		Graduation (%)	
	(1)	(2)	(3)	(4)	(5)	(6)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.028	0.073**	0.043	0.135**	0.964	2.277**
	(0.021)	(0.032)	(0.030)	(0.055)	(1.034)	(1.059)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	7852	7850	7852	7850	7853	7853
F-stat	8	8	8	8	8	8

FIGURE A1. Debt Payment Schedule Example

This figure is an example of a debt payment schedule from the Elgin ISD in 1997.

Fiscal Year Ending 8/31	Outstanding Debt(a) Principal	Outstanding Debt(a) Interest	Outstanding Debt(a) Total	The Bonds Principal	The Bonds Interest	The Bonds Total	Total	% of Principal Retired
1998	$ 53,000	$ 212,000	$ 265,000	$ -	$ 300,290	$ 300,290	$ 565,290	
1999	46,202	223,796	269,998	-	794,885	794,885	1,064,883	
2000	40,263	234,739	275,002	-	794,885	794,885	1,069,887	
2001	34,449	240,549	274,998	-	794,885	794,885	1,069,883	
2002	39,121	325,882	365,003	-	794,885	794,885	1,159,888	1.34%
2003				-	794,885	794,885	794,885	
2004				375,000	786,729	1,161,729	1,161,729	
2005				395,000	769,784	1,164,784	1,164,784	
2006				440,000	750,985	1,190,985	1,190,985	
2007				465,000	730,164	1,195,164	1,195,164	11.89%
2008				485,000	707,955	1,192,955	1,192,955	
2009				510,000	684,318	1,194,318	1,194,318	
2010				535,000	659,238	1,194,238	1,194,238	
2011				560,000	632,398	1,192,398	1,192,398	
2012				590,000	603,648	1,193,648	1,193,648	28.76%
2013				620,000	573,398	1,193,398	1,193,398	
2014				655,000	541,195	1,196,195	1,196,195	
2015				690,000	506,898	1,196,898	1,196,898	
2016				725,000	470,453	1,195,453	1,195,453	
2017				765,000	431,713	1,196,713	1,196,713	50.51%
2018				805,000	390,893	1,195,893	1,195,893	
2019				850,000	347,863	1,197,863	1,197,863	
2020				900,000	302,138	1,202,138	1,202,138	
2021				950,000	253,575	1,203,575	1,203,575	
2022				1,000,000	202,388	1,202,388	1,202,388	
2023				1,060,000	148,313	1,208,313	1,208,313	
2024				1,115,000	91,219	1,206,219	1,206,219	
2025				1,180,000	30,975	1,210,975	1,210,975	100.00%
	$ 213,035	$ 1,236,965	$ 1,450,000	$ 15,670,000	$ 14,890,947	$ 30,560,947	$ 32,010,948	

FIGURE A2. Construction Schedule Example

This figure is an example of a construction schedule from the Austin ISD's 2022 bond proposal.

BOND PROGRAM AUSTIN ISD 2022

2022 Bond Schedule: Campus Architectural Team Projects

TABLE KEY

ST: Design Start
OP: Estimated School Opening

SCHOOL	PROJECT TYPE	2023 Q1	2023 Q2	2023 Q3	2023 Q4	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4	2026 Q1	2026 Q2	2026 Q3	2026 Q4	2027 Q1	2027 Q2	2027 Q3	2027 Q4	2028 Q1	2028 Q2	2028 Q3	2028 Q4
COOK ELEMENTARY SCHOOL	OPEN CONCEPT		ST									OP													
OAK HILL ELEMENTARY SCHOOL	OPEN CONCEPT		ST									OP													
ODOM ELEMENTARY SCHOOL	OPEN CONCEPT		ST							OP															
WILLIAMS ELEMENTARY SCHOOL	OPEN CONCEPT		ST									OP													
ALLISON ELEMENTARY SCHOOL	FULL MODERNIZATION		ST											OP											
BURNET MIDDLE SCHOOL	FULL MODERNIZATION		ST															OP							
HARRIS ELEMENTARY SCHOOL	FULL MODERNIZATION		ST											OP											
HOUSTON ELEMENTARY SCHOOL	FULL MODERNIZATION		ST											OP											
LINDER ELEMENTARY SCHOOL	FULL MODERNIZATION		ST											OP											
PECAN SPRINGS ELEMENTARY SCHOOL	FULL MODERNIZATION		ST											OP											
SADLER MEANS YOUNG WOMEN'S LEADERSHIP ACADEMY	FULL MODERNIZATION		ST															OP							
TRAVIS EARLY COLLEGE HIGH SCHOOL	FULL MODERNIZATION		ST																					OP	
WOOTEN ELEMENTARY SCHOOL	FULL MODERNIZATION		ST											OP											
ANDERSON HIGH SCHOOL	PHASED MODERNIZATION			ST										OP											
CROCKETT EARLY COLLEGE HIGH SCHOOL	PHASED MODERNIZATION			ST														OP							
LANGFORD ELEMENTARY SCHOOL	FULL MODERNIZATION			ST												OP									
LBJ EARLY COLLEGE HIGH SCHOOL	PHASED MODERNIZATION			ST																		OP			
MCCALLUM HIGH SCHOOL	PHASED MODERNIZATION			ST														OP							
NORTHEAST EARLY COLLEGE HIGH SCHOOL	PHASED MODERNIZATION			ST																		OP			
BARRINGTON ELEMENTARY SCHOOL	FULL MODERNIZATION				ST											OP									
CLIFTON CAREER DEVELOPMENT SCHOOL	COMPREHENSIVE				ST									OP											
DOBIE MIDDLE SCHOOL	PHASED MODERNIZATION				ST									OP											
MARTIN MIDDLE SCHOOL	PHASED MODERNIZATION				ST															OP					
OAK SPRINGS ELEMENTARY SCHOOL	FULL MODERNIZATION				ST											OP									
NELSON FIELD	COMPREHENSIVE					ST									OP										
AKINS EARLY COLLEGE HIGH SCHOOL	COMPREHENSIVE						ST								OP										
NAVARRO EARLY COLLEGE HIGH SCHOOL	PHASED MODERNIZATION						ST													OP					
WOOLDRIDGE ELEMENTARY SCHOOL	FULL MODERNIZATION						ST											OP							
AUSTIN HIGH SCHOOL	PHASED MODERNIZATION							ST										OP							
YELLOW JACKET STADIUM	COMPREHENSIVE								ST						OP										
ANDREWS ELEMENTARY SCHOOL	FULL MODERNIZATION								ST													OP			
NELSON BUS TERMINAL	COMPREHENSIVE									ST									OP						
O. HENRY MIDDLE SCHOOL	PHASED MODERNIZATION									ST														OP	
HILL ELEMENTARY SCHOOL	PHASED MODERNIZATION										ST											OP			
DELCO ACTIVITY CENTER	COMPREHENSIVE												ST									OP			

Project timelines were determined by prioritizing safety and security, historically underserved communities, construction timelines and cost savings. The design start and estimated open dates are subject to change based on factors such as supply chain, weather, site development permitting, unforeseen construction conditions, etc.

In addition to the projects listed, there are **300+ targeted projects** which will be implemented as part of the 2022 Bond. For more information, visit **AISDFuture.com** and the **FAQ**.

Revised September 2023 - Design start and estimated opening dates are subject to change.

FIGURE A3. Potential Debt Assistance and Taxable Property Value per pupil.
This figure shows the relationship between the potential state contribution as a fraction of the debt service payments on the approved bond and the taxable property value per pupil in 1997. The sample is the universe of school districts in Texas.

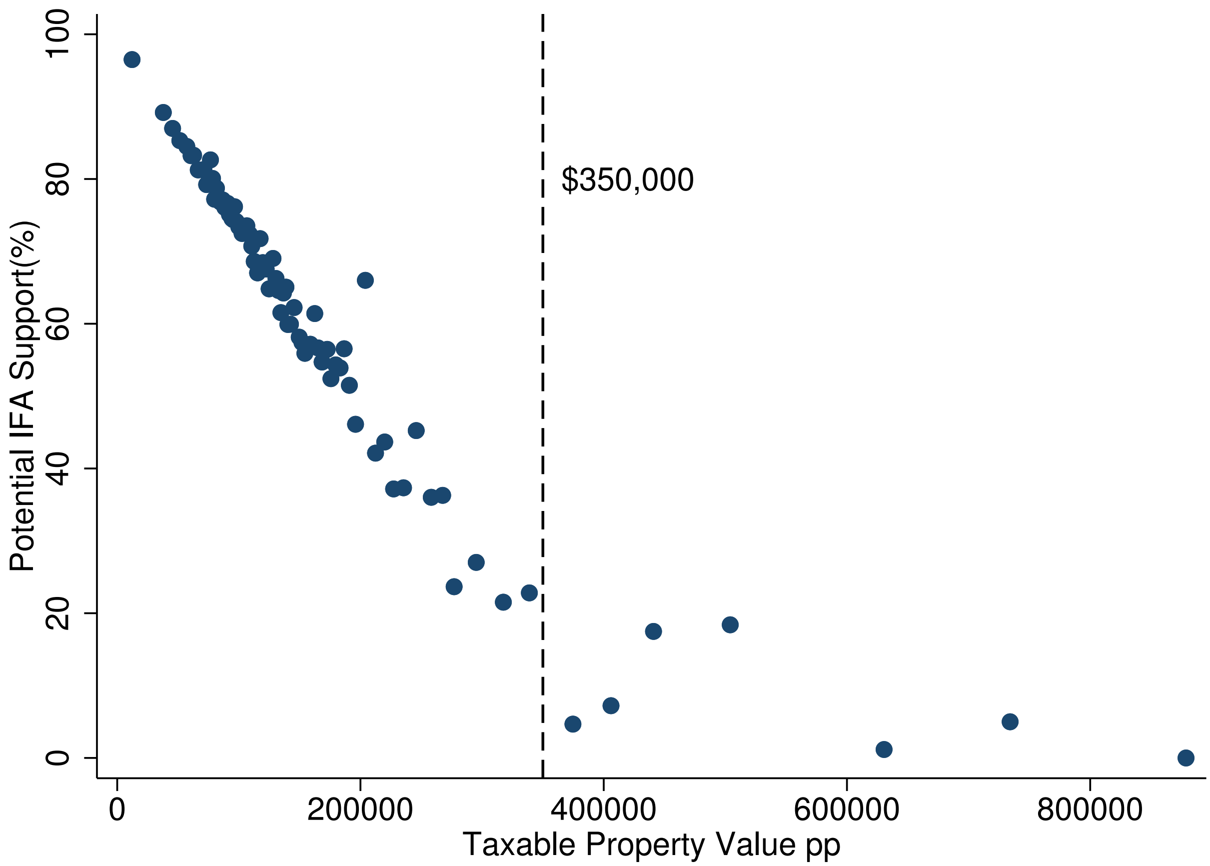


FIGURE A4. First Stage Estimation Results Using State Debt Support.
This figure plots coefficient estimates and 95% confidence intervals from the following first stage of the IV approach: $DA_{i,t} = \sum_{j \neq 1997} \pi_j (DTL\ High_i \times \mathbf{1}_{t=j}) + \Pi C_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$. The dependent variable is the fraction of annual debt service payments supported by the state. The coefficient estimate is allowed to vary by year where the reference point is the year 1997. $DTL\ High_i$ takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. Control variables in $C_{i,t}$ include the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, and cash holdings scaled by current expenditures.α_i and α_t are district dummies and year dummies, respectively. Diamond plots indicate that heteroskedasticity-consistent standard errors are used. Square plots indicate that standard errors are clustered at the school district level. All variables are winsorized at the 1st and 99th percentiles.

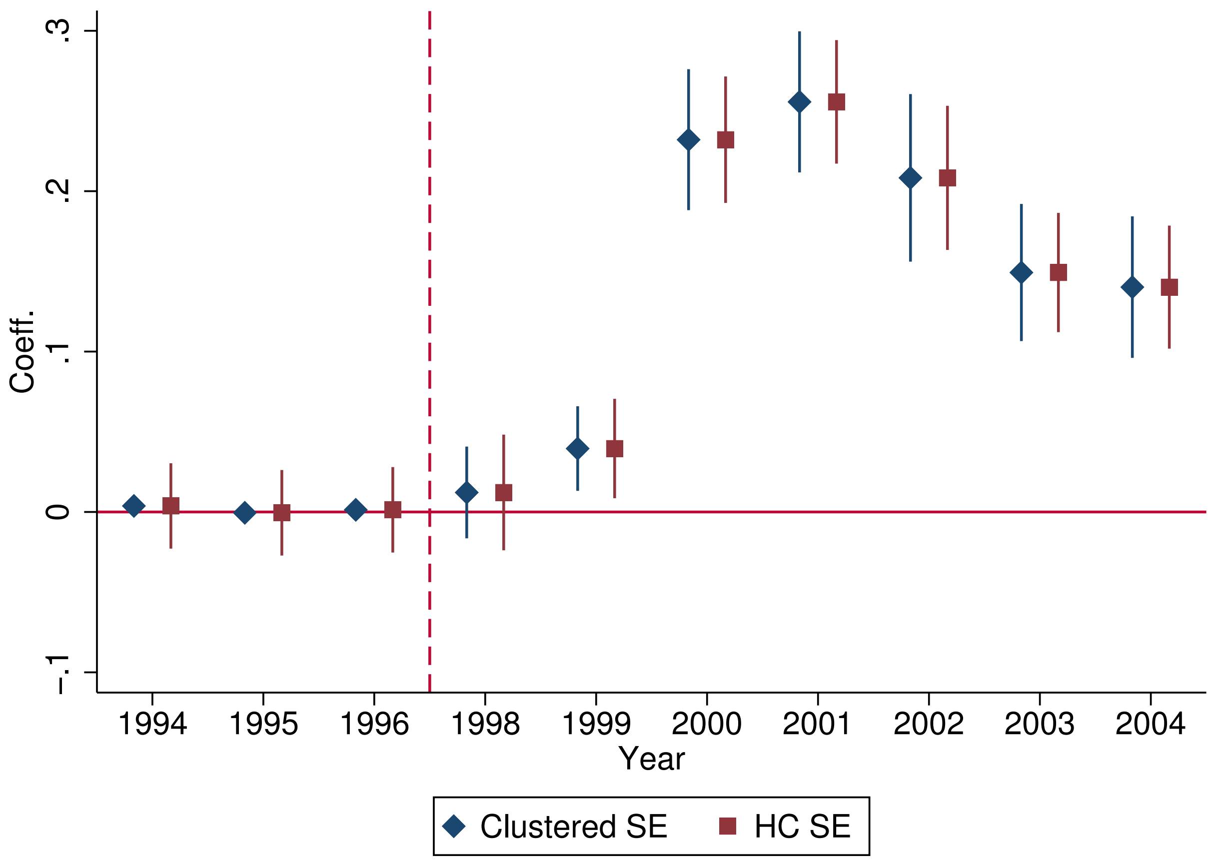


FIGURE A5. Geographical Distribution of School Districts by Oil Property Value per pupil.
This figure shows the geographical distribution of school districts by taxable oil and gas property values per pupil as of 1994.

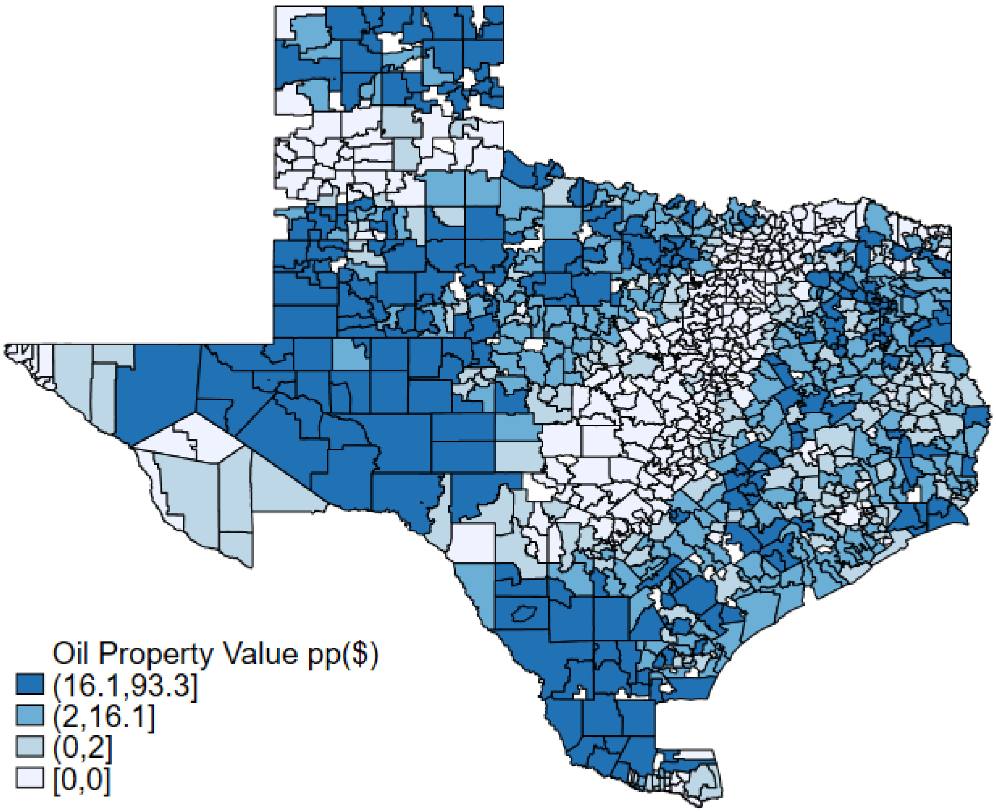


TABLE A1. First Stage Estimation Results Using State Debt Support.
This table reports coefficient estimates from the following first stage of the IV approach: $DA_{i,t} = \pi(DTL\ High_i \times Post_t) + \Pi C_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$. The dependent variable is the percentage of annual debt service payments supported by the state. Columns 1 and 2 estimate the first stage without and with control variables, respectively. $FTD_{i,t}$ is the percentage of annual debt service payments supported by the state. $DTL\ High_i$ takes a value of 1 if the district has an average outstanding net long-term debt-to-property tax levy ratio in the 1987-1991 period that is above the median and 0 otherwise. $Post_t$ is an indicator denoting if t is greater than or equal to 1998. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the local share of total revenue per pupil, the log ofcurrent expenditures per pupil, and cash holdings scaled by current expenditures. α_i and α_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

Dep. Var.: Subsidy-to-Debt Payment (%)	(1)	(2)
DTL High × Post	0.164***	0.171***
	(0.014)	(0.013)
% Eligible		0.005***
		(0.000)
Cash-to-Current Exp.		-0.035
		(0.023)
Log Current Exp. pp		0.030
		(0.048)
District FE	Yes	Yes
Year FE	Yes	Yes
Size FE	Yes	Yes
Adj R^2	0.53	0.55
Obs	9590	9590
F-stats	142	185

TABLE A2. Alternative Explanation: Composition Effects with Stayers.
This table reports coefficient estimates from the following second stage of the IV approach, after dropping students who stayed with the current school district within the past two years:
$\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t+4$ in columns 1 and 3, and between $t+5$ and $t+9$ in columns 2 and 4. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log ofcurrent expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math		Graduation (%)	
	(1)	(2)	(3)	(4)	(5)	(6)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.029	0.008	0.044	0.089*	2.039	0.327
	(0.032)	(0.030)	(0.035)	(0.046)	(1.381)	(1.298)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	7848	7849	7848	7849	7853	7852
F-stat	7	8	7	8	8	8

TABLE A3. Effect of Debt Relief on Test Scores - OLS Results.
This table reports coefficient estimates from the following OLS regression:
$\bar{Y}_{i,t} = \beta Cap_{i,t} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t + 4$ in columns 1 and 3, and between $t + 5$ and $t + 9$ in columns 2 and 4. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log ofcurrent expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.001	0.001*	-0.001	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
% Eligible	-0.000	-0.000	-0.001**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Cash-to-Current Exp.	-0.007	-0.005	0.004	-0.037
	(0.014)	(0.018)	(0.018)	(0.024)
Log Current Exp. pp	0.043	-0.035	0.040	-0.061
	(0.027)	(0.033)	(0.036)	(0.042)
Size Quartiles=2	0.008	-0.004	0.007	0.045*
	(0.015)	(0.016)	(0.021)	(0.023)
Size Quartiles=3	0.023	0.045*	0.042	0.089**
	(0.022)	(0.024)	(0.030)	(0.036)
Size Quartiles=4	0.034	0.063**	0.092**	0.155***
	(0.027)	(0.028)	(0.042)	(0.043)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	9590	9589	9590	9589
Adj. R^2	0.86	0.85	0.81	0.80

TABLE A4. Effect of Debt Relief on Non-test Outcomes - OLS Results.
This table reports coefficient estimates from the following OLS regression:
$\bar{Y}_{i,t} = \beta Cap_{i,t} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are attendance rates in columns 1 and 2, graduation rates in columns 3 and 4, college entrance exam participation rates in columns 5 and 6, and college enrollment rates in columns 7 and 8. In particular, the dependent variables represent the average values from t to $t + 4$ in odd columns and from $t + 5$ to $t + 9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log ofcurrent expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Attendance (%)		Graduation (%)		College Exam Tested (%)		College Enroll (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.002	0.003	0.027	-0.007	-0.012	0.101**	0.031	-0.047
	(0.002)	(0.002)	(0.033)	(0.027)	(0.056)	(0.049)	(0.030)	(0.030)
% Eligible	-0.001*	-0.001	-0.018**	-0.016**	0.047***	0.043***	0.021**	0.023***
	(0.001)	(0.001)	(0.007)	(0.007)	(0.014)	(0.014)	(0.009)	(0.009)
Cash-to-Current Exp.	0.009	-0.107**	-1.236**	-0.218	-1.012	0.065	-1.387**	-1.185*
	(0.044)	(0.045)	(0.589)	(0.505)	(0.990)	(0.960)	(0.577)	(0.658)
Log Current Exp. pp	-0.113	0.006	-1.745	-0.929	2.525	0.175	-1.500	-1.151
	(0.081)	(0.075)	(1.244)	(1.065)	(1.815)	(1.785)	(0.942)	(0.979)
Size Quartiles=2	0.086	0.068	0.803	1.112*	1.333	-0.517	0.713	1.616**
	(0.054)	(0.046)	(0.513)	(0.582)	(1.146)	(1.101)	(0.705)	(0.811)
Size Quartiles=3	0.153**	0.140**	0.727	2.416***	0.253	-0.066	0.999	1.896*
	(0.072)	(0.068)	(0.767)	(0.757)	(1.614)	(1.414)	(0.904)	(1.025)
Size Quartiles=4	0.159*	0.243***	0.801	3.922***	0.591	-0.053	1.327	2.591**
	(0.091)	(0.081)	(0.995)	(0.893)	(1.864)	(2.003)	(1.147)	(1.152)
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9590	9590	9590	9590	9557	9575	9590	9590
Adj. R^2	0.87	0.87	0.84	0.83	0.79	0.78	0.86	0.87

TABLE A5. Effect of Debt Relief on Labor Market Outcomes - OLS Results.
This table reports coefficient estimates from the following OLS regression:
$\bar{Y}_{i,t} = \beta Cap_{i,t} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are the log of average annual income (columns 1 and 2) and the percentage employed (columns 3 and 4), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log ofcurrent expenditures per pupil, and cash holdings scaled by current expenditures. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Age 24-26 Wage		Age 24-26 Emp. (%)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
% Local Rev	-0.020***	0.006	0.018	-0.002
	(0.005)	(0.006)	(0.011)	(0.009)
Cash-to-Current Exp.	-0.018	0.109	0.030	0.549
	(0.252)	(0.250)	(0.496)	(0.535)
Log Current Exp. pp	-0.549	0.775	-1.492	0.315
	(0.472)	(0.514)	(1.008)	(0.829)
Capital Spending($1,000)	-0.020	0.007	-0.009	-0.034
	(0.014)	(0.013)	(0.024)	(0.022)
Constant	29.604***	18.057***	88.453***	74.404***
	(4.107)	(4.450)	(8.746)	(7.239)
Controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	6974	6974	6974	6974
Adj. R^2	0.85	0.86	0.83	0.85

TABLE A6. Effect of Debt Relief on Test Scores - the 1990 Employment × Linear Trends. This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta \widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t+4$ in columns 1, 3, and 5, and between $t+5$ and $t+9$ in columns 2, 4, and 6. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 employment and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.019	0.069***	-0.012	0.135***
	(0.019)	(0.026)	(0.023)	(0.046)
% Eligible	-0.000*	0.000	-0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.001)
Cash-to-Current Exp.	0.054	-0.215***	0.030	-0.450***
	(0.059)	(0.082)	(0.074)	(0.146)
Log Current Exp. pp	0.030	0.024	0.024	0.046
	(0.031)	(0.050)	(0.042)	(0.083)
Size Quartiles=2	0.008	-0.004	0.008	0.044
	(0.017)	(0.023)	(0.021)	(0.046)
Size Quartiles=3	0.025	0.036	0.045	0.073
	(0.024)	(0.034)	(0.030)	(0.066)
Size Quartiles=4	0.033	0.058	0.098**	0.148
	(0.030)	(0.048)	(0.042)	(0.092)
lemp_90 × year	-0.001	-0.001	0.004***	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes
Obs.	9524	9523	9524	9523
F-stat	11	11	11	11

TABLE A7. Effect of Debt Relief on Non-test Outcomes - the 1990 Employment × Linear Trends.

This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are attendance rates in columns 1 and 2, graduation rates in columns 3 and 4, college entrance exam participation rates in columns 5 and 6, and college enrollment rates in columns 7 and 8. In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 employment and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Attendance (%)		Graduation (%)		College Exam Tested (%)		College Enroll (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.007	0.146**	0.035	1.705**	0.420	2.074	0.594	1.994**
	(0.055)	(0.066)	(0.603)	(0.771)	(1.090)	(1.320)	(0.655)	(0.910)
% Eligible	-0.000	0.000	-0.010	0.007	0.049***	0.050***	0.016*	0.030**
	(0.001)	(0.001)	(0.009)	(0.013)	(0.017)	(0.019)	(0.010)	(0.014)
Cash-to-Current Exp.	0.002	-0.549***	-1.430	-5.722**	-2.307	-5.949	-2.957	-7.328**
	(0.175)	(0.212)	(1.940)	(2.507)	(3.575)	(4.336)	(2.165)	(2.986)
Log Current Exp. pp	-0.129	0.139	-1.809	0.386	2.866	1.802	-0.852	0.615
	(0.092)	(0.117)	(1.361)	(1.566)	(2.092)	(2.240)	(1.094)	(1.608)
Size Quartiles=2	0.087	0.069	0.812	1.112	1.332	-0.533	0.713	1.594
	(0.054)	(0.066)	(0.515)	(0.800)	(1.163)	(1.190)	(0.735)	(1.104)
Size Quartiles=3	0.158**	0.124	0.760	2.232**	0.202	-0.350	0.912	1.593
	(0.072)	(0.093)	(0.763)	(1.062)	(1.646)	(1.495)	(0.938)	(1.398)
Size Quartiles=4	0.170*	0.235*	0.889	3.899***	0.533	-0.200	1.218	2.344
	(0.090)	(0.120)	(0.994)	(1.352)	(1.895)	(2.242)	(1.159)	(1.717)
lemp_90 × year	0.008***	-0.002	0.062***	0.029	-0.023	-0.097*	-0.068***	-0.122***
	(0.002)	(0.003)	(0.023)	(0.030)	(0.044)	(0.051)	(0.025)	(0.035)
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9524	9524	9524	9524	9491	9509	9524	9524
F-stat	11	11	11	11	13	12	11	11

TABLE A8. Effect of Debt Relief on Labor Market Outcomes - the 1990 Employment × Linear Trends.

This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. he dependent variables are the log of average annual income (columns 1 and 2) and the percentage employed (columns 3 and 4), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 employment and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Age 24-26 Wage		Age 24-26 Emp. (%)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.024**	0.029**	0.460	0.052
	(0.012)	(0.011)	(0.443)	(0.350)
% Eligible	0.000	-0.000	-0.004	0.011**
	(0.000)	(0.000)	(0.007)	(0.005)
Cash-to-Current Exp.	0.072*	-0.080**	-1.444	0.292
	(0.037)	(0.037)	(1.382)	(1.141)
Log Current Exp. pp	-0.062**	0.074**	-0.642	0.393
	(0.029)	(0.031)	(1.242)	(0.995)
1990 Emp × Year	-0.001	-0.002**	0.010	0.009
	(0.001)	(0.001)	(0.028)	(0.023)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes
Obs.	6926	6926	6926	6926
F-stat	14	14	14	14

TABLE A9. Effect of Debt Relief on Test Scores - the 1990 Per Capita Income × Linear Trends.

This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t+4$ in columns 1, 3, and 5, and between $t+5$ and $t+9$ in columns 2, 4, and 6. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.025	0.059***	0.014	0.123***
	(0.016)	(0.020)	(0.019)	(0.035)
% Eligible	-0.001*	0.000	-0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.001)
Cash-to-Current Exp.	0.070	-0.186***	-0.044	-0.415***
	(0.051)	(0.065)	(0.064)	(0.115)
Log Current Exp. pp	0.022	0.013	0.051	0.037
	(0.031)	(0.045)	(0.042)	(0.075)
Size Quartiles=2	0.009	-0.003	0.003	0.046
	(0.018)	(0.021)	(0.022)	(0.043)
Size Quartiles=3	0.028	0.040	0.031	0.079
	(0.025)	(0.032)	(0.030)	(0.062)
Size Quartiles=4	0.038	0.063	0.079*	0.156*
	(0.032)	(0.044)	(0.044)	(0.086)
lpc_inc_90 × year	-0.002	-0.002	0.008*	-0.003
	(0.003)	(0.004)	(0.004)	(0.007)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes
Obs.	9568	9567	9568	9567
F-stat	18	18	18	18

TABLE A10. Effect of Debt Relief on Non-test Outcomes - the 1990 Per Capita Income × Linear Trends.

This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are attendance rates in columns 1 and 2, graduation rates in columns 3 and 4, college entrance exam participation rates in columns 5 and 6, and college enrollment rates in columns 7 and 8. In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Attendance (%)		Graduation (%)		College Exam Tested (%)		College Enroll (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	0.054	0.115**	0.501	1.991***	0.533	1.797*	0.098	1.080*
	(0.048)	(0.050)	(0.528)	(0.696)	(0.942)	(1.046)	(0.556)	(0.648)
% Eligible	-0.000	0.001	-0.008	0.003	0.029	0.019	0.013	0.023*
	(0.001)	(0.001)	(0.010)	(0.015)	(0.018)	(0.020)	(0.010)	(0.012)
Cash-to-Current Exp.	-0.169	-0.460***	-2.741	-6.505***	-2.667	-5.163	-1.548	-4.705**
	(0.157)	(0.166)	(1.755)	(2.350)	(3.152)	(3.533)	(1.894)	(2.193)
Log Current Exp. pp	-0.066	0.107	-1.312	0.728	2.926	1.483	-1.330	-0.252
	(0.096)	(0.102)	(1.419)	(1.639)	(2.040)	(2.137)	(1.050)	(1.254)
Size Quartiles=2	0.077	0.052	0.715	1.160	1.733	0.151	0.837	1.820*
	(0.058)	(0.059)	(0.537)	(0.858)	(1.171)	(1.145)	(0.705)	(0.935)
Size Quartiles=3	0.130*	0.096	0.506	2.279**	0.949	0.993	1.219	2.153*
	(0.078)	(0.085)	(0.793)	(1.147)	(1.638)	(1.451)	(0.905)	(1.161)
Size Quartiles=4	0.131	0.192*	0.535	3.981***	1.635	1.788	1.646	3.120**
	(0.100)	(0.107)	(1.073)	(1.499)	(1.922)	(2.175)	(1.151)	(1.345)
lpc_inc_90 × year	0.016	0.029***	0.155	-0.079	-0.675***	-1.135***	-0.193*	-0.351***
	(0.010)	(0.010)	(0.112)	(0.140)	(0.212)	(0.222)	(0.111)	(0.120)
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9568	9568	9568	9568	9535	9553	9568	9568
F-stat	18	18	18	18	19	18	18	18

TABLE A11. Effect of Debt Relief on Labor Market Outcomes - the 1990 Per Capita Income × Linear Trends.
This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. he dependent variables are the log of average annual income (columns 1 and 2) and the percentage employed (columns 3 and 4), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). In particular, the dependent variables represent the average values from t to $t + 4$ in odd columns and from $t + 5$ to $t + 9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Age 24-26 Wage		Age 24-26 Emp. (%)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.026***	0.020**	0.435	0.111
	(0.010)	(0.009)	(0.411)	(0.313)
% Eligible	-0.000	0.000	-0.007	0.005
	(0.000)	(0.000)	(0.008)	(0.006)
Cash-to-Current Exp.	0.076**	-0.057**	-1.320	0.144
	(0.032)	(0.029)	(1.305)	(1.031)
Log Current Exp. pp	-0.072**	0.064**	-0.663	0.401
	(0.029)	(0.028)	(1.231)	(0.999)
lpc_inc_90 × year	-0.014***	0.000	-0.015	-0.165*
	(0.003)	(0.002)	(0.125)	(0.093)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes
Obs.	6958	6958	6958	6958
F-stat	22	22	22	22

TABLE A12. Effect of Debt Relief on Test Scores - Controlling for the Enrollment Size Directly.

This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta \widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t+4$ in columns 1, 3, and 5, and between $t+5$ and $t+9$ in columns 2, 4, and 6. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the log of the enrollment size, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.033*	0.045**	-0.003	0.104***
	(0.017)	(0.020)	(0.020)	(0.034)
% Eligible	-0.000	0.001	-0.001	0.001**
	(0.000)	(0.000)	(0.000)	(0.001)
Cash-to-Current Exp.	0.099*	-0.137**	0.024	-0.344***
	(0.058)	(0.064)	(0.067)	(0.113)
Log Current Exp. pp	0.038	0.033	0.098**	0.068
	(0.033)	(0.040)	(0.042)	(0.068)
Log Enrollment	0.058*	0.093***	0.161***	0.149**
	(0.029)	(0.036)	(0.037)	(0.066)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	9590	9589	9590	9589
F-stat	15	15	15	15

TABLE A13. Effect of Debt Relief on Non-test Outcomes - Controlling for the Enrollment Size Directly.

This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are attendance rates in columns 1 and 2, graduation rates in columns 3 and 4, college entrance exam participation rates in columns 5 and 6, and college enrollment rates in columns 7 and 8. In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the log of the enrollment size, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Attendance (%)		Graduation (%)		College Exam Tested (%)		College Enroll (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	0.029	0.073	-0.164	1.497**	-0.297	1.366	-0.546	0.611
	(0.051)	(0.050)	(0.605)	(0.693)	(1.047)	(1.125)	(0.615)	(0.643)
% Eligible	-0.001	0.000	-0.013	0.007	0.050***	0.056***	0.020*	0.035***
	(0.001)	(0.001)	(0.009)	(0.012)	(0.017)	(0.019)	(0.011)	(0.011)
Cash-to-Current Exp.	-0.069	-0.294*	-0.221	-4.682**	0.186	-3.966	0.722	-3.080
	(0.168)	(0.166)	(1.973)	(2.315)	(3.564)	(3.872)	(2.122)	(2.179)
Log Current Exp. pp	-0.020	0.196**	-0.221	1.489	3.528*	1.003	-0.748	0.110
	(0.093)	(0.088)	(1.268)	(1.426)	(1.926)	(2.013)	(1.100)	(1.178)
Log Enrollment	0.228***	0.384***	4.607***	3.783***	3.461*	-0.391	3.448***	2.552**
	(0.083)	(0.085)	(1.343)	(1.289)	(2.069)	(2.028)	(1.135)	(1.091)
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9590	9590	9590	9590	9557	9575	9590	9590
F-stat	15	15	15	15	15	15	15	15

TABLE A14. Effect of Debt Relief on Labor Market Outcomes - Controlling for the Enrollment Size Directly.

This table reports coefficient estimates from the following second stage of the IV approach: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. he dependent variables are the log of average annual income (columns 1 and 2) and the percentage employed (columns 3 and 4), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the log of the enrollment size, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Age 24-26 Wage		Age 24-26 Emp. (%)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.033***	0.015*	0.608	0.223
	(0.011)	(0.009)	(0.453)	(0.350)
% Eligible	0.000	0.000	-0.006	0.009
	(0.000)	(0.000)	(0.008)	(0.006)
Cash-to-Current Exp.	0.096**	-0.040	-1.980	-0.325
	(0.039)	(0.030)	(1.464)	(1.150)
Log Current Exp. pp	-0.068**	0.076***	-1.104	0.028
	(0.031)	(0.026)	(1.243)	(0.953)
Log Enrollment	0.025	0.069***	-1.947	-1.660
	(0.032)	(0.026)	(1.259)	(1.037)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	6974	6974	6974	6974
F-stat	18	18	18	18

TABLE A15. Effect of Debt Relief on Test Scores - Dropping the Top Oil Revenue Quartile. This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the top oil revenue quartile as of 1997: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t+4$ in columns 1, 3, and 5, and between $t+5$ and $t+9$ in columns 2, 4, and 6. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.017	0.047**	0.020	0.091***
	(0.016)	(0.020)	(0.021)	(0.032)
% Eligible	-0.000	0.000	-0.001***	0.001
	(0.000)	(0.000)	(0.000)	(0.001)
Cash-to-Current Exp.	0.028	-0.159**	-0.063	-0.308***
	(0.050)	(0.062)	(0.067)	(0.101)
Log Current Exp. pp	0.027	0.002	0.035	-0.006
	(0.036)	(0.044)	(0.051)	(0.074)
Size Quantiles=2	-0.011	0.006	0.014	0.076**
	(0.019)	(0.023)	(0.029)	(0.036)
Size Quantiles=3	-0.004	0.074**	0.039	0.150**
	(0.024)	(0.033)	(0.038)	(0.058)
Size Quantiles=4	0.043	0.134***	0.105**	0.260***
	(0.034)	(0.042)	(0.046)	(0.075)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	7115	7115	7115	7115
F-stat	14	14	14	14

TABLE A16. Effect of Debt Relief on Non-test Outcomes - Dropping the Top Oil Revenue Quartile.

This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the top oil revenue quartile as of 1997:
$\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are attendance rates in columns 1 and 2, graduation rates in columns 3 and 4, college entrance exam participation rates in columns 5 and 6, and college enrollment rates in columns 7 and 8. In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Attendance (%)		Graduation (%)		College Exam Tested (%)		College Enroll (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	0.027	0.015	0.793	0.974*	0.397	0.265	0.706	0.640
	(0.049)	(0.045)	(0.579)	(0.586)	(0.993)	(1.044)	(0.602)	(0.619)
% Eligible	-0.002**	-0.002*	-0.014	-0.018	0.049**	0.050**	0.031**	0.043***
	(0.001)	(0.001)	(0.012)	(0.012)	(0.022)	(0.021)	(0.013)	(0.014)
Cash-to-Current Exp.	-0.072	-0.118	-2.920	-2.813	-1.973	-0.096	-2.868	-3.401*
	(0.153)	(0.144)	(1.813)	(1.828)	(3.240)	(3.527)	(1.945)	(1.936)
Log Current Exp. pp	-0.073	-0.050	-0.388	-0.048	4.903**	0.695	-1.095	-0.021
	(0.112)	(0.096)	(1.594)	(1.529)	(2.425)	(2.267)	(1.330)	(1.371)
grp_v_3=2	0.048	-0.047	0.758	0.653	3.013**	-0.626	1.901***	1.341
	(0.055)	(0.043)	(0.563)	(0.664)	(1.223)	(1.088)	(0.667)	(0.838)
grp_v_3=3	0.019	0.069	0.571	1.509*	1.889	-0.936	1.300	2.812**
	(0.076)	(0.076)	(0.795)	(0.901)	(1.699)	(1.482)	(0.955)	(1.115)
grp_v_3=4	0.130	0.115	1.018	2.176**	3.247*	-1.166	1.635	3.598***
	(0.111)	(0.089)	(0.919)	(1.084)	(1.881)	(1.850)	(1.131)	(1.294)
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	7115	7115	7115	7115	7108	7105	7115	7115
F-stat	14	14	14	14	15	15	14	14

TABLE A17. Effect of Debt Relief on Labor Market Outcomes - Dropping the Top Oil Revenue Quartile.

This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the top oil revenue quartile as of 1997:
$\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. he dependent variables are the log of average annual income (columns 1 and 2) and the percentage employed (columns 3 and 4), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). In particular, the dependent variables represent the average values from t to $t + 4$ in odd columns and from $t + 5$ to $t + 9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Age 24-26 Wage		Age 24-26 Emp. (%)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.028**	0.004	0.394	-0.215
	(0.011)	(0.008)	(0.451)	(0.351)
% Eligible	-0.000	0.000	-0.005	0.011
	(0.000)	(0.000)	(0.010)	(0.008)
Cash-to-Current Exp.	0.085**	-0.021	-0.689	0.814
	(0.040)	(0.027)	(1.519)	(1.218)
Log Current Exp. pp	-0.060*	0.024	-1.695	-0.448
	(0.031)	(0.023)	(1.299)	(1.034)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes
Obs.	5175	5175	5175	5175
F-stat	15	15	15	15

TABLE A18. Effect of Debt Relief on Test Scores - Dropping the Top Enrollment Size Quartile.

This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the top enrollment size quartile as of 1997:
$\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t+4$ in columns 1, 3, and 5, and between $t+5$ and $t+9$ in columns 2, 4, and 6. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.039	0.065**	-0.000	0.118**
	(0.026)	(0.032)	(0.028)	(0.050)
% Eligible	-0.001	0.000	-0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.001)
Cash-to-Current Exp.	0.114	-0.215**	-0.012	-0.409**
	(0.084)	(0.102)	(0.092)	(0.162)
Log Current Exp. pp	0.016	0.024	0.042	0.037
	(0.038)	(0.052)	(0.046)	(0.078)
Size Quantiles=2	0.018	-0.030	-0.006	-0.047
	(0.024)	(0.027)	(0.025)	(0.044)
Size Quantiles=3	0.040	-0.036	0.021	-0.064
	(0.039)	(0.044)	(0.041)	(0.073)
Size Quantiles=4	0.049	0.031	0.060	-0.009
	(0.040)	(0.046)	(0.043)	(0.078)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	7113	7112	7113	7112
F-stat	8	8	8	8

TABLE A19. Effect of Debt Relief on Non-test Outcomes - Dropping the Top Enrollment Size Quartile.

This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the top enrollment size quartile as of 1997: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are attendance rates in columns 1 and 2, graduation rates in columns 3 and 4, college entrance exam participation rates in columns 5 and 6, and college enrollment rates in columns 7 and 8. In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Attendance (%)		Graduation (%)		College Exam Tested (%)		College Enroll (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	0.036	0.132*	-0.209	2.493**	0.728	2.008	-0.045	1.203
	(0.068)	(0.079)	(0.783)	(1.185)	(1.418)	(1.621)	(0.844)	(1.001)
% Eligible	0.000	0.001	-0.012	0.009	0.050**	0.046**	0.017	0.026*
	(0.001)	(0.001)	(0.011)	(0.019)	(0.021)	(0.022)	(0.011)	(0.014)
Cash-to-Current Exp.	-0.105	-0.515**	-0.489	-8.203**	-3.488	-5.435	-0.994	-5.037
	(0.218)	(0.255)	(2.536)	(3.875)	(4.656)	(5.426)	(2.803)	(3.303)
Log Current Exp. pp	-0.021	0.128	-1.368	1.366	4.181*	1.612	-1.805	-0.046
	(0.106)	(0.119)	(1.461)	(1.974)	(2.351)	(2.416)	(1.247)	(1.492)
grp_v_1=2	0.027	-0.004	0.546	-0.755	1.285	1.150	0.259	0.742
	(0.059)	(0.074)	(0.651)	(1.044)	(1.436)	(1.499)	(0.743)	(0.919)
grp_v_1=3	0.038	-0.006	0.815	-2.296	1.522	-0.236	1.377	1.002
	(0.095)	(0.116)	(1.026)	(1.697)	(2.202)	(2.374)	(1.204)	(1.417)
grp_v_1=4	0.131	0.133	0.249	-0.736	0.428	-0.749	0.440	2.368
	(0.106)	(0.129)	(1.019)	(1.757)	(2.179)	(2.522)	(1.208)	(1.472)
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	7113	7113	7113	7113	7107	7105	7113	7113
F-stat	8	8	8	8	9	8	8	8

TABLE A20. Effect of Debt Relief on Labor Market Outcomes - Dropping the Top Enrollment Size Quartile.
This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the top enrollment size quartile as of 1997:
$\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. he dependent variables are the log of average annual income (columns 1 and 2) and the percentage employed (columns 3 and 4), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Age 24-26 Wage		Age 24-26 Emp. (%)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.023*	0.026**	0.287	0.279
	(0.013)	(0.013)	(0.529)	(0.453)
% Eligible	0.000	-0.000	-0.008	0.010
	(0.000)	(0.000)	(0.009)	(0.007)
Cash-to-Current Exp.	0.074*	-0.077*	-1.036	-0.263
	(0.043)	(0.044)	(1.686)	(1.452)
Log Current Exp. pp	-0.067**	0.070**	-0.585	0.778
	(0.033)	(0.035)	(1.437)	(1.232)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes
Obs.	5175	5175	5175	5175
F-stat	12	12	12	12

TABLE A21. Effect of Debt Relief on Test Scores - Dropping the Bottom Enrollment Size Quartile.

This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the bottom enrollment size quartile as of 1997: $\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are standardized 8th-grade reading scores in columns 1 and 2 and math scores in columns 3 and 4. In particular, the dependent variables are the average between t and $t + 4$ in columns 1, 3, and 5, and between $t + 5$ and $t + 9$ in columns 2, 4, and 6. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Reading		Math	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.016	0.057***	0.012	0.083***
	(0.013)	(0.017)	(0.017)	(0.026)
% Eligible	-0.000	0.000	-0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.001)
Cash-to-Current Exp.	0.006	-0.181***	-0.069	-0.285***
	(0.040)	(0.057)	(0.054)	(0.085)
Log Current Exp. pp	0.023	0.057	0.030	0.058
	(0.041)	(0.055)	(0.060)	(0.083)
Size Quantiles=2	0.017	0.023	0.030	0.023
	(0.015)	(0.019)	(0.020)	(0.029)
Size Quantiles=3	0.017	0.050	0.059*	0.049
	(0.023)	(0.034)	(0.034)	(0.049)
Size Quantiles=4	0.061*	0.086*	0.133***	0.122*
	(0.035)	(0.047)	(0.045)	(0.072)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	7104	7104	7104	7104
F-stat	20	20	20	20

TABLE A22. Effect of Debt Relief on Non-test Outcomes - Dropping the Bottom Enrollment Size Quartile.

This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the bottom enrollment size quartile as of 1997:
$\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. The dependent variables are attendance rates in columns 1 and 2, graduation rates in columns 3 and 4, college entrance exam participation rates in columns 5 and 6, and college enrollment rates in columns 7 and 8. In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Attendance (%)		Graduation (%)		College Exam Tested (%)		College Enroll (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	0.036	0.098**	0.550	1.057**	0.738	0.813	0.476	0.833*
	(0.042)	(0.044)	(0.433)	(0.462)	(0.795)	(0.833)	(0.448)	(0.486)
% Eligible	-0.001	-0.001	-0.009	0.003	0.042**	0.051***	0.023***	0.039***
	(0.001)	(0.001)	(0.008)	(0.009)	(0.017)	(0.017)	(0.009)	(0.010)
Cash-to-Current Exp.	-0.166	-0.345**	-1.920	-3.676**	-3.728	-2.138	-2.922**	-3.804**
	(0.139)	(0.142)	(1.336)	(1.514)	(2.526)	(2.704)	(1.442)	(1.664)
Log Current Exp. pp	-0.165	0.128	0.285	1.203	1.924	1.512	-0.319	1.255
	(0.122)	(0.140)	(1.501)	(1.589)	(2.613)	(2.511)	(1.430)	(1.574)
grp_v_2=2	0.030	0.049	-0.136	0.980*	1.005	-1.852**	0.748	0.915
	(0.052)	(0.055)	(0.548)	(0.564)	(0.810)	(0.718)	(0.530)	(0.576)
grp_v_2=3	-0.012	0.177**	0.999	1.835**	-1.019	-3.703***	1.649**	2.170**
	(0.069)	(0.088)	(0.901)	(0.831)	(1.381)	(1.232)	(0.806)	(0.847)
grp_v_2=4	0.113	0.237**	1.320	2.628***	-1.182	-4.286**	1.949*	2.723***
	(0.105)	(0.107)	(1.049)	(0.942)	(1.740)	(1.808)	(1.036)	(1.034)
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	7104	7104	7104	7104	7099	7095	7104	7104
F-stat	20	20	20	20	20	20	20	20

TABLE A23. Effect of Debt Relief on Labor Market Outcomes - Dropping the Bottom Enrollment Size Quartile.
This table reports coefficient estimates from the following second stage of the IV approach after dropping the school districts in the bottom enrollment size quartile as of 1997:
$\bar{Y}_{i,t} = \beta\widehat{Cap_{i,t}} + \Gamma C_{i,t} + \delta_i + \delta_t + \bar{u}_{i,t}$, where $\bar{Y}_{i,t}$ denotes the average of Y over a specified period. he dependent variables are the log of average annual income (columns 1 and 2) and the percentage employed (columns 3 and 4), both measured for 8th-grade cohorts in year t when individuals reach ages 24–26, conditional on working in Texas at that age (i.e., 10–12 years later). In particular, the dependent variables represent the average values from t to $t+4$ in odd columns and from $t+5$ to $t+9$ in even columns. $Cap_{i,t}$ is the three-year cumulative capital spending per pupil in thousands of 2000 dollars. $\widehat{Cap_{i,t}}$ is the predicted value of $Cap_{i,t}$ from the first stage. Control variables in $C_{i,t}$ include the enrollment size quartile dummies, the imputed eligibility based on the allocation formula, the log of current expenditures per pupil, cash holdings scaled by current expenditures, and the interaction term between the log of 1990 per capita income and linear trends. δ_i and δ_t are district dummies and year dummies, respectively. All variables are winsorized at the 1st and 99th percentiles. Standard errors are presented in parentheses and are clustered at the district level. Significance levels are denoted by *, **, ***, which correspond to 10%, 5%, and 1% levels, respectively.

	Age 24-26 Wage		Age 24-26 Emp. (%)	
	(1)	(2)	(3)	(4)
	Yr 0-4	Yr 5-9	Yr 0-4	Yr 5-9
Capital Spending($1,000)	-0.025***	0.019***	0.516	-0.193
	(0.008)	(0.007)	(0.359)	(0.243)
% Eligible	0.000*	0.000	-0.005	0.009*
	(0.000)	(0.000)	(0.008)	(0.005)
Cash-to-Current Exp.	0.055*	-0.048*	-1.699	0.946
	(0.029)	(0.025)	(1.089)	(0.821)
Log Current Exp. pp	-0.055*	0.098***	0.292	-0.378
	(0.033)	(0.037)	(1.418)	(0.938)
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Size FE	Yes	Yes	Yes	Yes
Obs.	5167	5167	5167	5167
F-stat	20	20	20	20